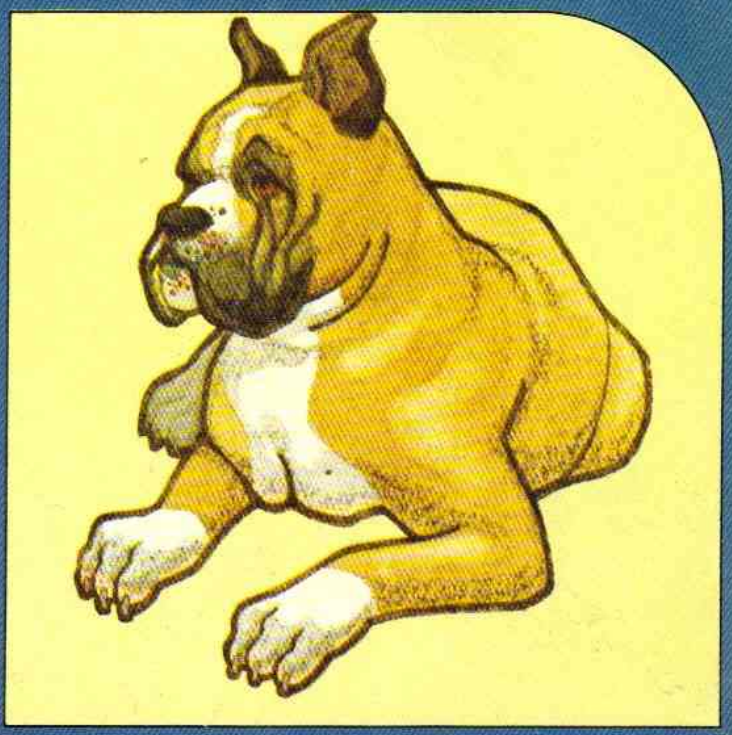
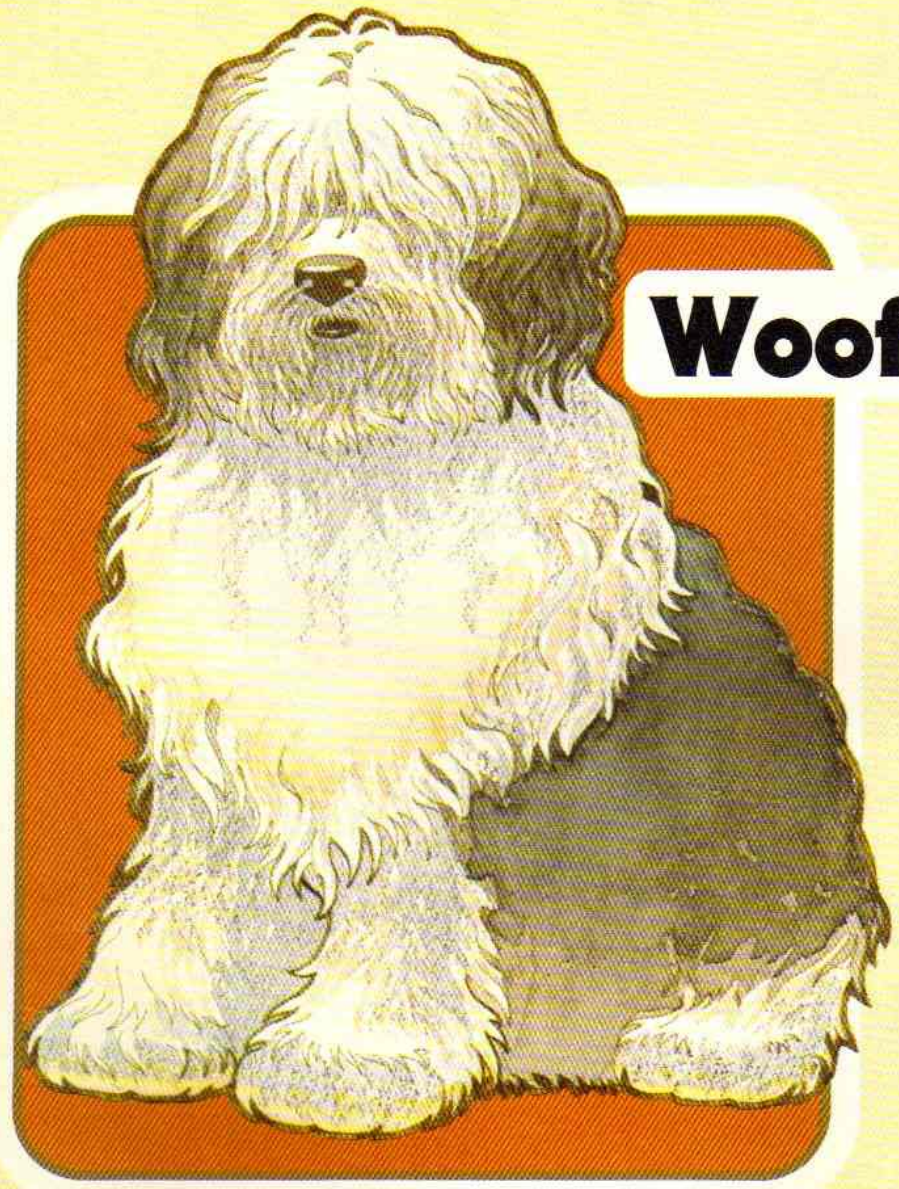
A Science Magazine from CTW, the Creators of Sesame Street. Dec. 1981/Jan. 1982 14192

3-2-1 CONTACT™

Inside: A Grr-reat Dog Poster!





"Do you know what I am? Of course, I'm a dog. Well, yeah, I'm a talking dog. But that's not exactly what I had in mind. Do you know what breed of dog I am?

"The breed I am is called 'sheepdog.' My parents were both sheepdogs. And all my brothers and sisters are sheepdogs, too. You can find out more about different breeds of dogs when you read the story on page 4. After you've finished, try your luck with the poster quiz on page 20."

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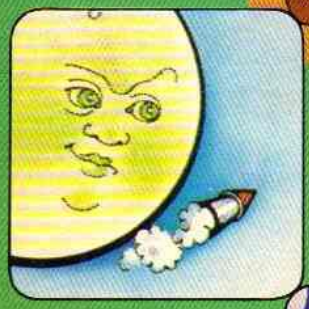

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Featuring This Month

Plus Our Regular Departments

DOGS, DOGS, & MORE DOGS

by Linda Tucker

German shepherds don't look like French poodles. Collies don't look like beagles. But even though some are tall and others are short, they are all dogs. No other warm-blooded animal has so many different shapes and sizes as this popular pet. There are hundreds of kinds of dogs found all over the world. Each kind is known as a *breed*.

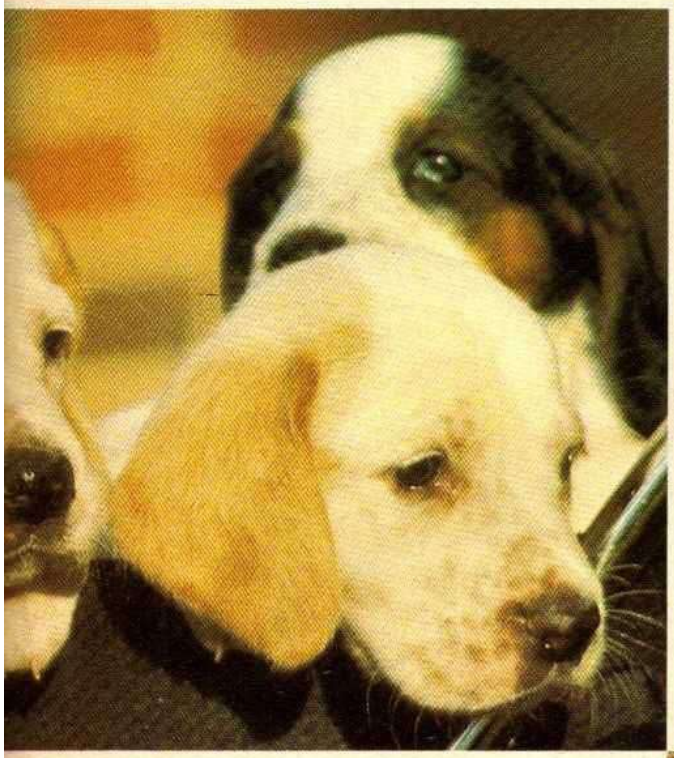
The world of dogs has lots of different breeds for two reasons. First, dogs change more from one generation to the next than most animals do. All animals, of course, must adjust to a changing climate or food supply. Those that fail to adapt will someday die out. But dogs change faster than most animals.

People have helped to create the different breeds of dogs, too. By controlling the mating of their dogs, people have been able to develop a kind of dog to meet their own needs. Long ago, for example, humans found that dogs made good guards for their homes. The best were big and brave. They also had good hearing and were quick to bark at strangers. Naturally, anyone who owned a good guard dog wanted to raise more of these useful animals. So this dog was allowed to mate only with another big brave guard dog. That made it likely that some of their puppies would be even bigger and better guards.

This controlled mating is called *breeding*. When it went on and on for many years, the result was a new breed of dog. This is how one of today's best guards, the German shepherd, came to exist. Other breeds were produced in the same way.

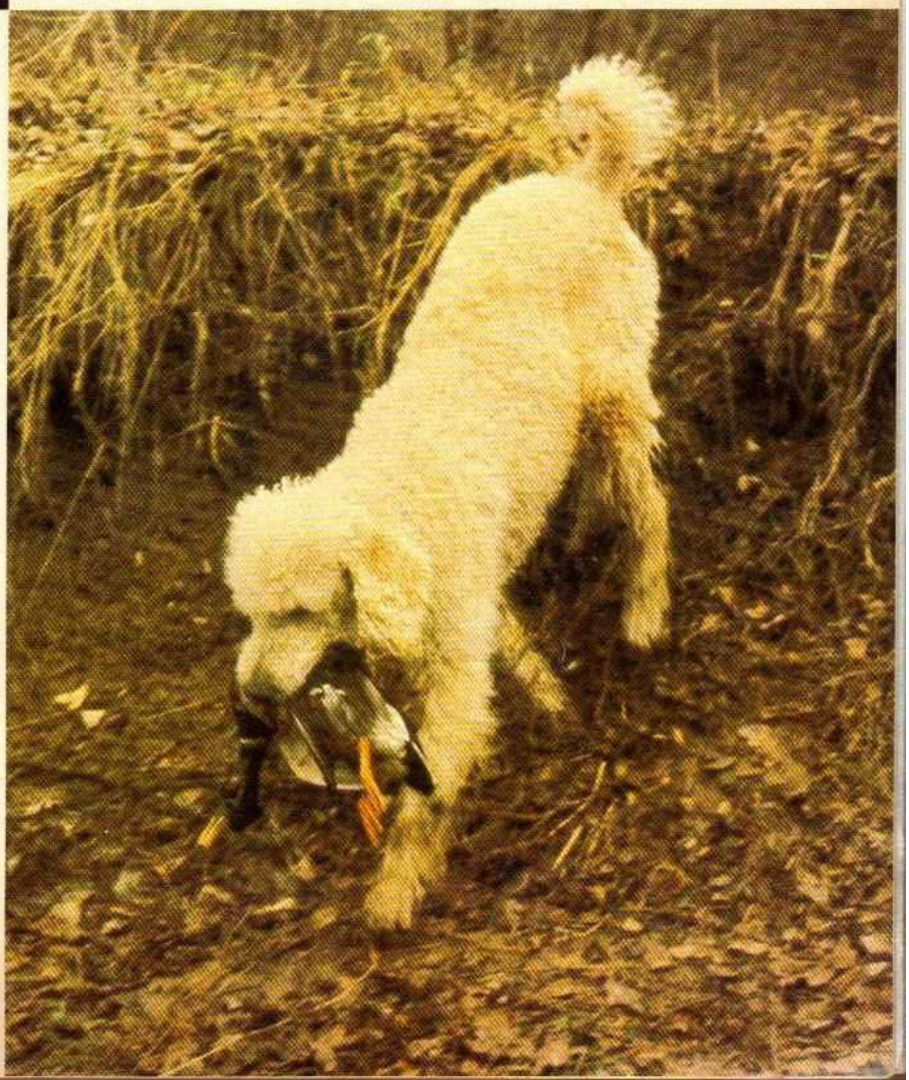
Dogs and people have lived together for more than 10,000 years. During that time, many different kinds of dogs have been bred for different purposes. Some friendly little lap dogs like the toy poodle were raised to be pets. A smart dog such as the collie was bred to take care of flocks of sheep.

Today, dog breeding still goes on. But now it has a different purpose. People are not creating many



Above: Poodles come in three sizes. This large one is called the standard. It is the biggest of all.

Right: Just like poodles of long ago, this one is bringing a bird back to the hunter who shot it.



new breeds of dogs. But they want to preserve the beautiful breeds that took so many years to develop. Here's a look at five kinds of dogs that figure to be around for a long time to come.

The Poodle

The most popular dog breed in the United States today is the poodle. Although it is often called the French poodle, this dog was probably first known in Germany. The word poodle comes from a German word which means "to splash in the water." Early poodles were used by hunters to bring back birds they shot which fell in lakes or streams. Their fur was first clipped to help them swim better. Later, people began to clip their dogs just to make them look fancy.

The first poodles were fairly large. They were called *standard poodles*. Then people created a smaller kind called the *miniature* ➳

Left: Huskies are hard workers. They are very useful to people who live in cold, snowy parts of Alaska and Canada.

The Xoloitzcuintli

Chances are, you have never seen a xoloitzcuintli (show-low-eats-QUEEN-tlee). There are probably only a dozen of these dogs in the whole United States. There are not a great many more in Mexico where they come from. A woman in New York City owned a xolo. She was asked lots of questions whenever she took it for a walk. She finally started handing out printed papers telling about the breed.

The xolo has no hair. It is one of a number of Mexican hairless dogs. It is very clean and very warm. The Aztec Indians of Mexico used the xolo as a hot water bottle to keep their feet warm. In today's world, the xolo is no longer used to keep people warm. But owners of the xolo have found that it makes an excellent watchdog!

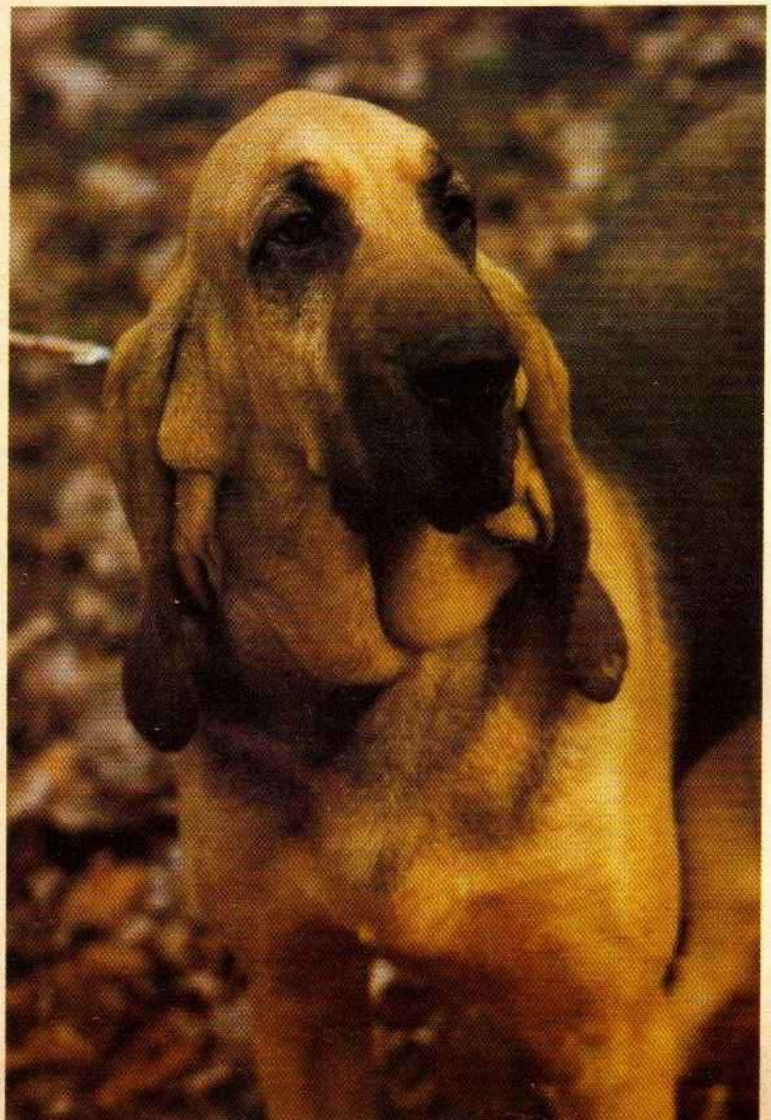
poodle. They did this by mating some of the smaller standard dogs. Later, smaller miniature poodles were mated for many years. The result is the tiniest poodle of all, known as the *toy poodle*.

The Siberian Husky

The husky is best known as a work dog. Huskies were brought from Siberia to Alaska to pull sleds in the early 1900s. Although they were smaller than most other sled dogs, they proved to be champions at their work. Huskies were bred to have great strength and endurance.

The husky's greatest success occurred in 1925. Many people in Nome, Alaska, came down with a terrible disease called *diphtheria*. There was not enough medicine in town so people had to bring it in from outside. They traveled with teams of huskies through a blizzard. The wind was blowing at 80 miles per hour and the temperature reached 50 degrees below zero! Still the dogs struggled on, covering 655 miles in six days. Their work saved the people of Nome.

Right: Huskies work in teams to pull heavy loads on sleds across the snow and ice.



Above: This big dog is a xoloitzcuintli. The xolo is one of several hairless dogs which come from Mexico.
Left: The bloodhound has a keen sense of smell.

The Bloodhound

The bloodhound is best known for its keen sense of smell. Like other hounds, it is bred to be a natural hunter. Nobody has to teach a bloodhound how to pick up a scent and follow it. That's what it was born to do.

The dog runs with its nose to the ground. They have been known to follow a scent for hundreds of miles. But once it finds the person or animal it has been following, a bloodhound's job is over. This dog tracks, but *never* attacks.

Breeding a dog has some disadvantages. The bloodhound is a perfect example. It has a great nose, but its eyesight is terrible. And in a race against many other kinds of dogs, the bloodhound would be left far behind.

But, thanks to its sensitive sniffer, the bloodhound is a popular and useful dog. It is often used to find missing persons and track down criminals. Bloodhounds are so good at their work that they are sometimes used by detectives. One hound, named Nick Carter, is said to have been responsible for 600 arrests. ➤➤

The Mutt

The poodle may be the most popular breed, but the mutt is the top dog in terms of numbers. In fact, there are many more mutts in the world than all the purebreds put together. The mutt, or mongrel, is a dog whose parents came from different mixed breeds. A purebred is a dog whose two parents are of the same breed. Some people prefer purebreds while others think mutts are better dogs. Those who vote for purebreds say that you always know what you're getting. If you buy a sheepdog puppy, for example, you know that someday it will become a big dog. But with a cute little mutt, you don't know how big it will grow up to be.

People who favor mutts say that they're heartier than purebreds. They also say that breeding sometimes produces bad traits as well as good ones. Some breeds of dogs are hard to train. Others are very nervous.

Whether you like purebreds or mutts, you live in a world rich with different breeds of dogs. In fact, you might even say it's a dog's world!

Left: Mutts have parents from different or mixed breeds of dogs.

Picking a Pooch

Whether you buy a mutt or a xoloitzcuintli, owning a dog has certain responsibilities. A dog has to be fed, cleaned, exercised and loved.

Here are some things to think about when you choose a dog:

* Do you want a purebred or a mutt?
* Do you want a large dog or a small one?
* Does your home have enough room for a large dog?
* Will your dog spend most of its time outdoors or indoors?
* Is the climate where you live better for a dog with a thick coat or a thin one?
* Do you need a good watchdog? Or do you just want a friendly pet?

Common sense is really your best guide in choosing the right dog. The pet you choose is probably going to spend a number of years with you. So make your decision carefully!

Pet Puzzlers

by Rebecca Herman

A CONTACT QUIZ

Think about an animal. Chances are good that somewhere it's kept as a pet. In Japan, many children tame mice and teach them to dance. Some children in Mexico keep fleas as pets. Australian children sometimes have pet kangaroos.

But what about more usual pets? How much do you know about cats, dogs and goldfish? Take this quiz and find out.

1. You can teach your parakeet to talk.
True or False?

2. You should wash your dog once a week.
True or False?

3. Cats use their whiskers to feel things.
True or False?

4. Turtles like to eat hamburgers.
True or False?

5. Wild animals make good pets.
True or False?

6. Frogs and toads are the same animal.
True or False?

7. When a goldfish opens and closes its mouth, it is drinking.
True or False?

8. Guinea pigs mow lawns.
True or False?

Answers on next page.

QUIZ ANSWERS

1

True You might be able to teach your parakeet to say a few words and phrases. Start with something easy, like the word "hello." Repeat it over and over for 20 minutes. It's boring, but it works! Always say the word in the same tone of voice. Sooner or later, probably in a few days, the parakeet should try to imitate you. When it does, repeat the word slowly and clearly, again and again.

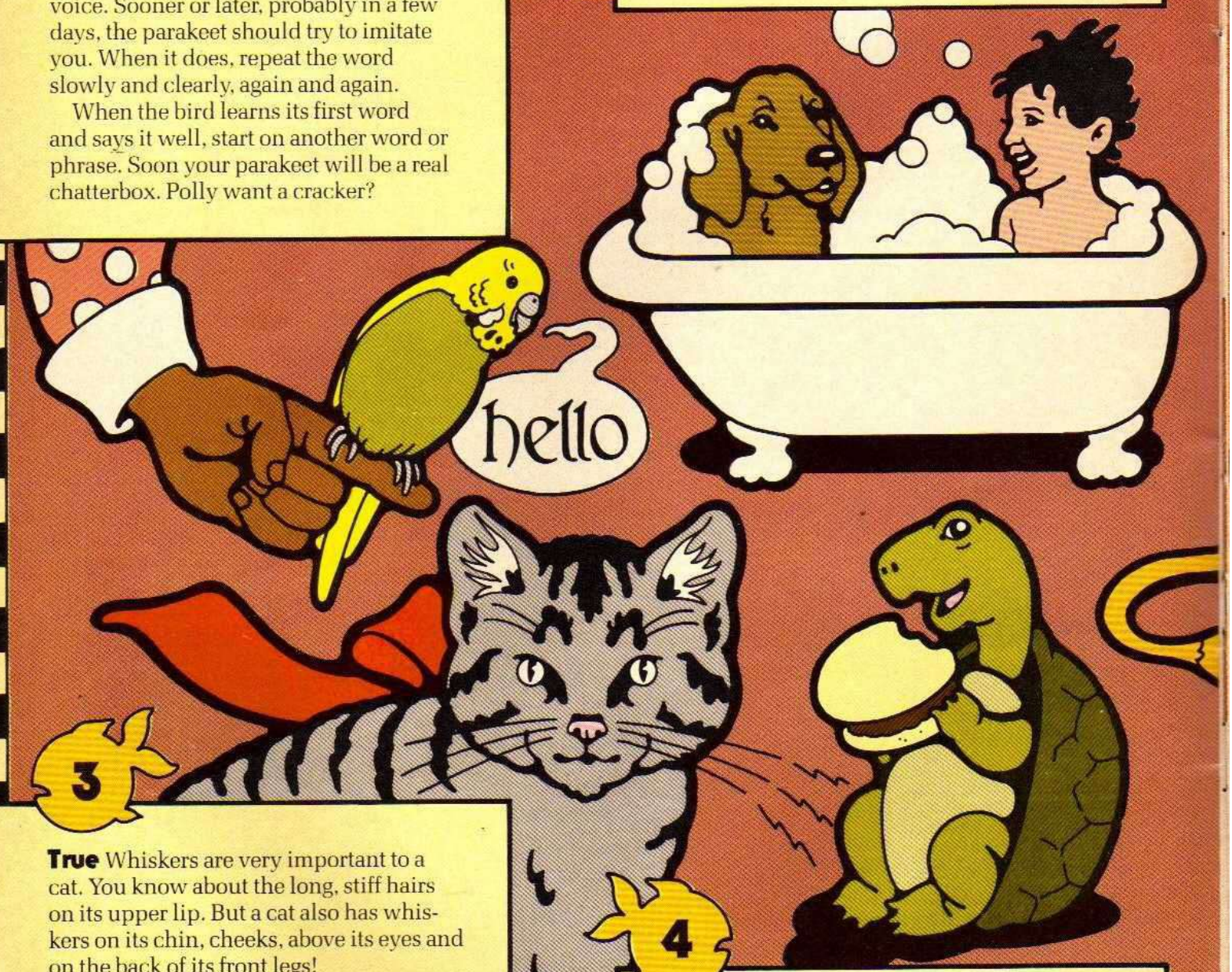
When the bird learns its first word and says it well, start on another word or phrase. Soon your parakeet will be a real chatterbox. Polly want a cracker?

2

False You may need a bath more than once a week, but your dog doesn't. In fact, washing a dog too often can dry out its skin.

A dog has naturally oily skin. Oil protects the skin and keeps it soft. Soap rinses away the oil. This makes the dog itchy and scratchy.

The best way to keep your pooch clean is to brush it often. Bathe your dog only when it *really* needs it.



3

True Whiskers are very important to a cat. You know about the long, stiff hairs on its upper lip. But a cat also has whiskers on its chin, cheeks, above its eyes and on the back of its front legs!

All hairs on a cat's body help it to feel things. But whiskers are extra sensitive.

You won't see the whiskers feeling things the way your fingers touch things, but they are doing their job. They even pick up tiny air vibrations bouncing off solid objects. That helps the cat move about in the dark without bumping into things.

4

True But hold the pickle and ketchup! The hamburgers turtles like to eat are the raw kind.

Most turtle food that you buy in the store is made of dead bugs. But in the wild, turtles eat worms, beetles, fish and, sometimes, plants. So make a turtle happy. Drop bits of raw fish or some finely-cut raw hamburger meat into its tank. Your turtle might even like to munch on a little lettuce or spinach. Offer it bits of bananas and grapes, too!

False The problem with cuddly, little lion cubs is that they grow up to be not-so-cuddly, big lions. Smaller animals may be less dangerous. But wild animals don't make good pets. No matter how tame it may seem, any wild animal will always be just that—wild.

Of course, you can always invite some small wild animals to your backyard for a visit. Why not make a wild bird feeder? The nut string feeder is an easy one.

With needle and thread, string together some unshelled peanuts. Hang them from a branch. Before you know it, you will have some fine-feathered friends.

5

6

False But frogs and toads do belong to the same family—the same way alligators and crocodiles are both reptiles. But 'gators and crocs are slightly different, and so are frogs and toads.

Frogs have smooth, moist skin. They live near or in water. Toads have bumpy, dry skin. They return to the water only to mate and lay eggs. Some people think if you touch a toad you'll get warts, too. But that's just a toad tale.

7

False Goldfish look like they're drinking all the time. Actually, they open their mouths to breathe. Like you, fish need oxygen to live. You get oxygen from air. Fish can only get it from water.

As the water is sucked in by the fish, it passes out through two slits on either side of the head. Under these slits are the fish's *gills*. Gills act like strainers. They trap the oxygen the fish needs.

The gills contain millions of tiny blood vessels. The oxygen slips through these tiny tubes and enters the blood stream. Then the oxygen travels all through the body. Pretty fishy, huh?

True Not with tiny lawn mowers, but with their teeth! Just like cows and sheep, guinea pigs like to eat grass. If you had enough of these little critters, they could mow your lawn.

Treat your pet to some grass once in a while. It will give the guinea pig the vitamin C needed to stay healthy. Of course, you cannot let your pet out to graze like a cow. But you can take some crispy grass from your lawn or the park, and put it in the cage. Sure enough, your guinea pig will munch away.

8

Factoids

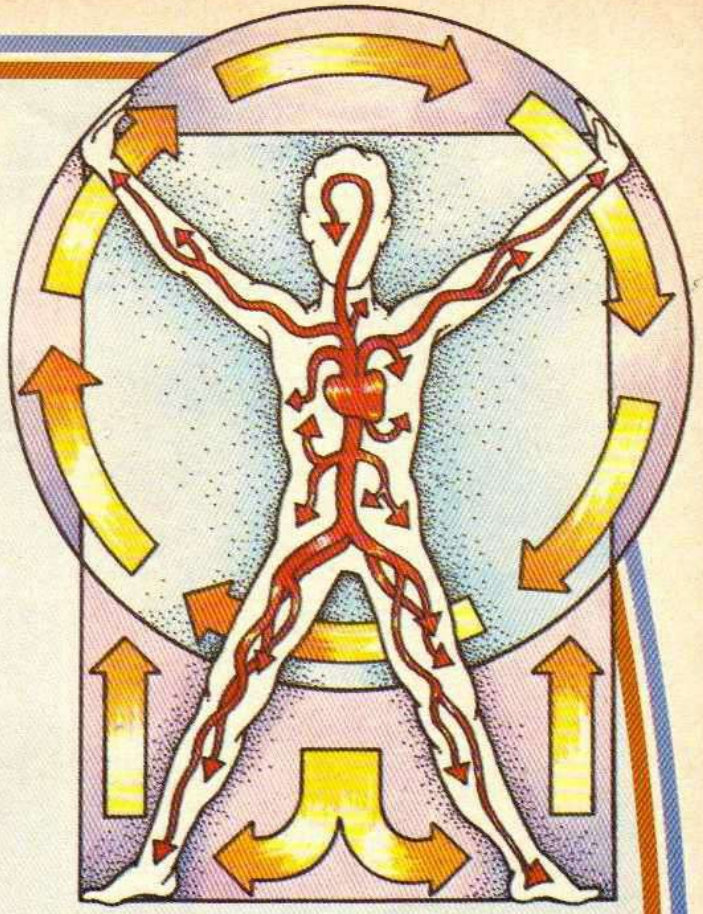
What are factoids? They are weird little facts that are stranger than strange, truer than true. Use them to wow your friends, amaze your family and dazzle your teachers.

More than half the shoes sold in the United States are sneakers.

A moose grows a set of seven-foot antlers in just 10 weeks.

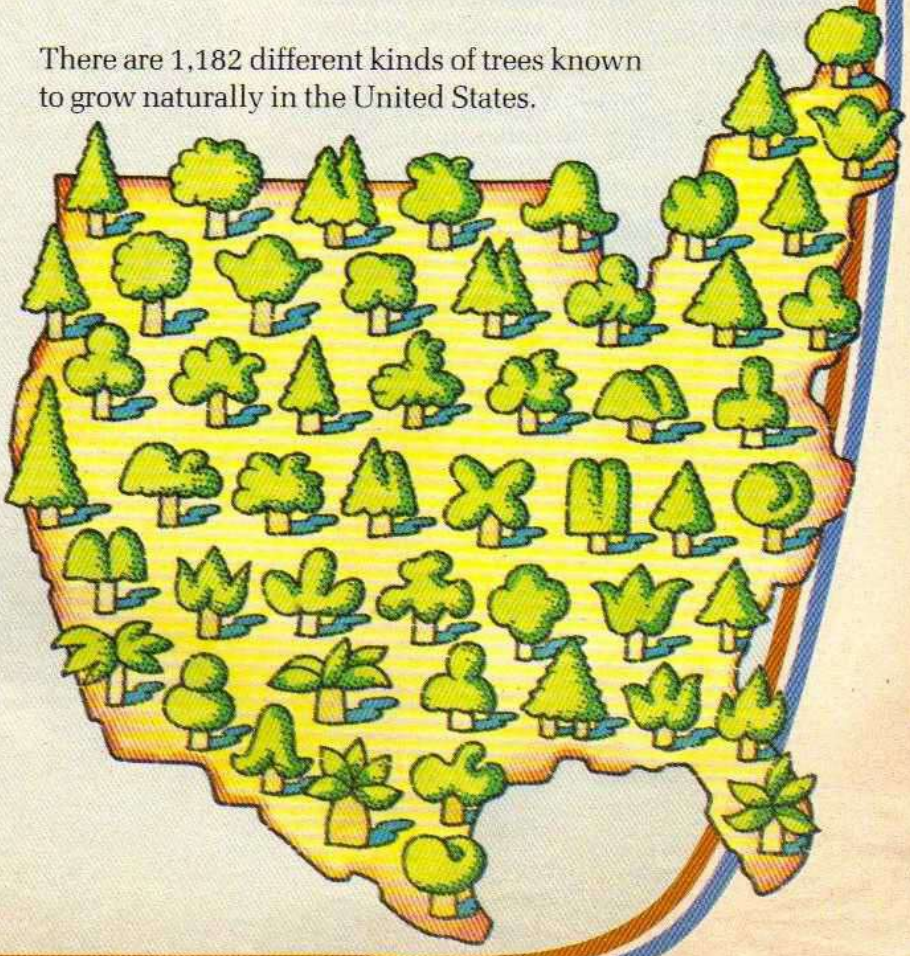
The water level of the ocean rises about 1/25th of an inch every year.

Anteaters eat as many as 30,000 ants in a day.



Your heart pumps blood completely around your body more than 1,000 times each day.

There are 1,182 different kinds of trees known to grow naturally in the United States.



Most light bulbs last about 1,000 hours.

Contact Report

Air Mobile It won't make gasoline companies happy, but now there is a car that uses air for fuel. That's right, *air*.

One of the first model air cars was built in Buffalo, Oklahoma, by a high school science teacher and her class. Gwen Cook's students worked on weekends and after school. To save money, they used everything from soda cans to skate wheels. After three months, the car was ready to roll.

Instead of gas, the new car uses air that has been squeezed into a very small space. This *compressed air* has a lot of force. As it is released, it goes through the engine and causes the wheels to turn. Top speed so far is about 35 miles per hour (56 km/hr).

The air car is far from perfect. After all, it takes energy to compress air in the first place. But the amount of energy used and the amount of pollution produced is less than with a "regular" car.

Gwen Cook believes that air cars might someday replace today's gasoline guzzlers. "Remember," she says, "when they built the first cars . . . Very few people thought they would replace the horse and buggy!"

—Written by April Koral

This car runs on air instead of gasoline. It was built by kids in Oklahoma.

Gold Fishing If you went looking for sunken treasure in the ocean, you would probably take along a map. But Florida treasure hunters are using a different kind of guide. They are getting their directions from dolphins!

The treasure includes gold chains and silver bars. It was lost 300 years ago, when two Spanish ships sank near Florida. Mel Lewis is the owner of a treasure-finding business. He hopes the dolphins can help locate the loot. To get them to do this, he asked dolphin trainer Rusty Nielson for help.

"Dolphins 'see' with sound," says Rusty. In the water they send out clicking and whistling sounds. These noises bounce off objects and come back as echoes. Different echoes help the dolphins identify different objects.

Nielson will teach the dolphins to drop special signalling beepers wherever they find gold or silver. Then he hopes divers will be able to follow the beeping sounds and bring up the treasure.

—Written by Michele Lyons

Left: Dolphins are becoming treasure hunters.

Contact Report

Seeing Red You probably think contact lenses help people see more clearly. Now there's a new kind that helps color-blind people see more *colors*.

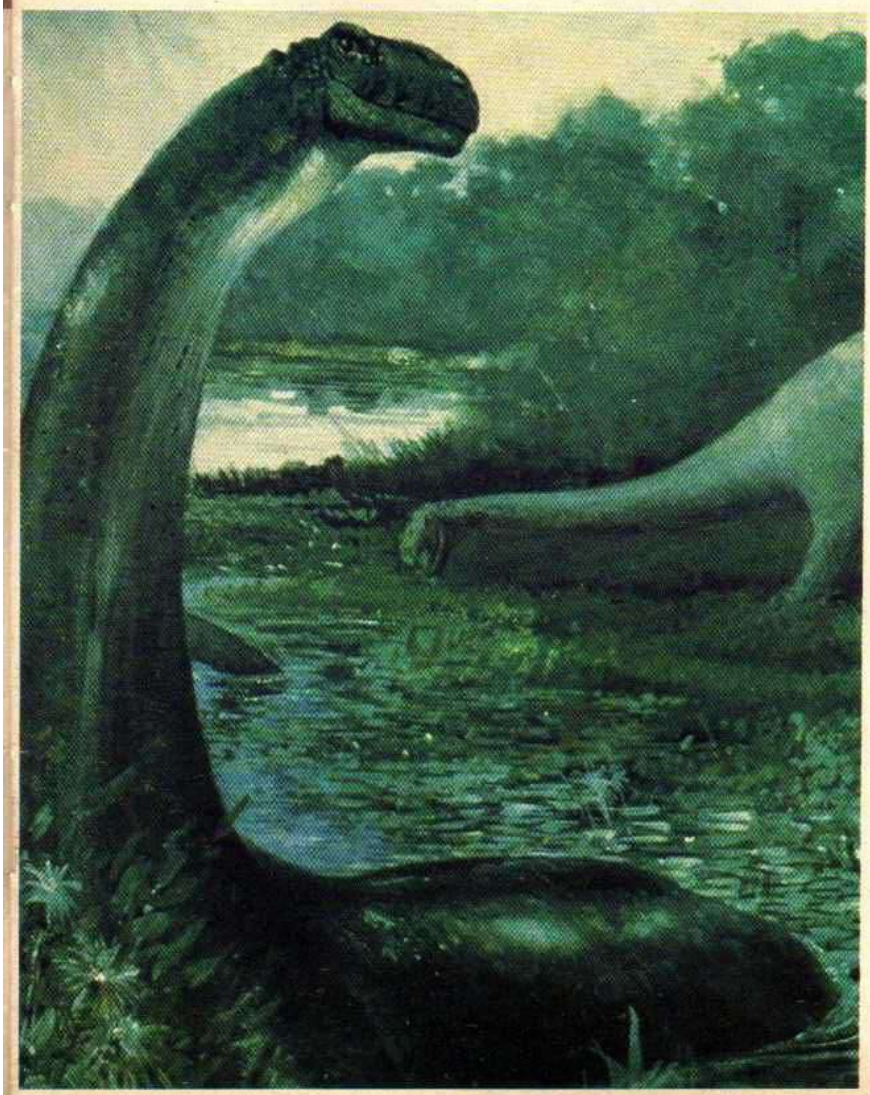
People who are called color-blind usually can see some colors. But other colors, like red and green, often look brownish to them.

Here's how the new ruby-red lens can really brighten things up for these people. Every time you look at something, each eye sends a picture to your brain. Then the brain flops one picture on top of the other.

A color-blind person wears the red lens on only one eye. A strong red image goes from that eye to the brain. But the other eye sends only its usual brownish image. When both these images get flopped together in the brain, a lens-wearing person can see bright red and green.

For people who haven't seen many colors before, that makes their world really rosy! —*Written by Michele Lyons*

A new contact lens makes colors look brighter.



Could some dinosaurs still be alive?

A Living Dinosaur? Dinosaurs all died out a long time ago, right? Well, maybe not. It's possible that a few might still be living in Africa. At least that's what Roy Mackal, a Chicago biologist, thinks.

In 1980, Mackal visited the African country called Zaire. More than 30 people there told him about a strange creature in the swamps. These people were shown drawings of different dinosaurs and asked to pick the one they'd seen. Most of them pointed to the same type of dinosaur.

Now Mackal is going back to hunt for that strange creature. "I hope to solve the mystery," he says. But whether Mackal finds a dinosaur or not, he is in for a giant-size adventure.

—*Written by Michele Lyons*

What's That? Have you seen a story in a newspaper or magazine that belongs in the *Contact Report?* Why not cut it out and send it to us? Be sure to include your name, age, address and the place you found the story. Send it to:

The Contact Report
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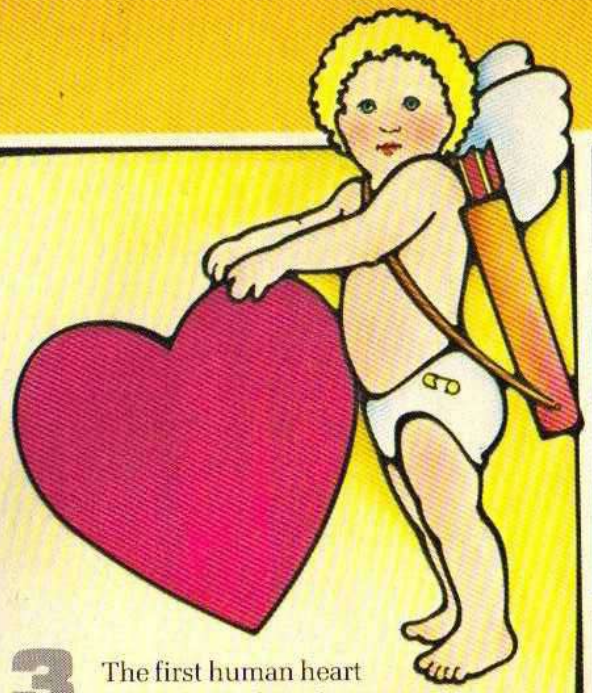
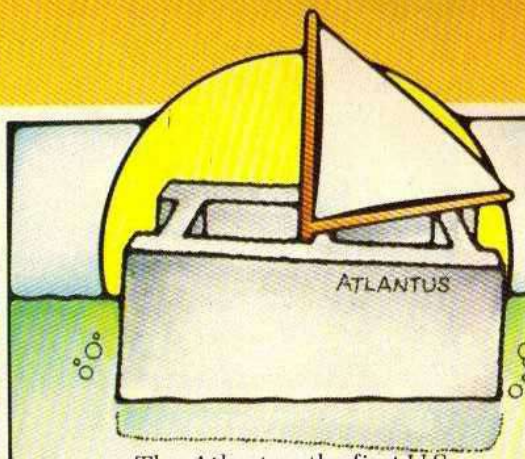
P.O. Box 599
Ridgefield, NJ 07657

1 The first drive-in gas station opens in Pittsburgh, Pennsylvania. (1913)

9 Roller skates with ball-bearing wheels are patented. (1884)



3 The first human heart transplant takes place. (1967)

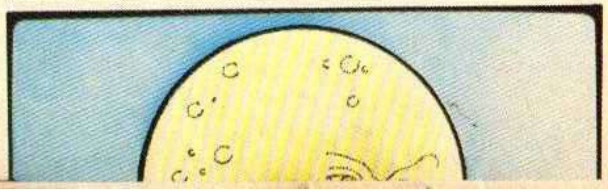


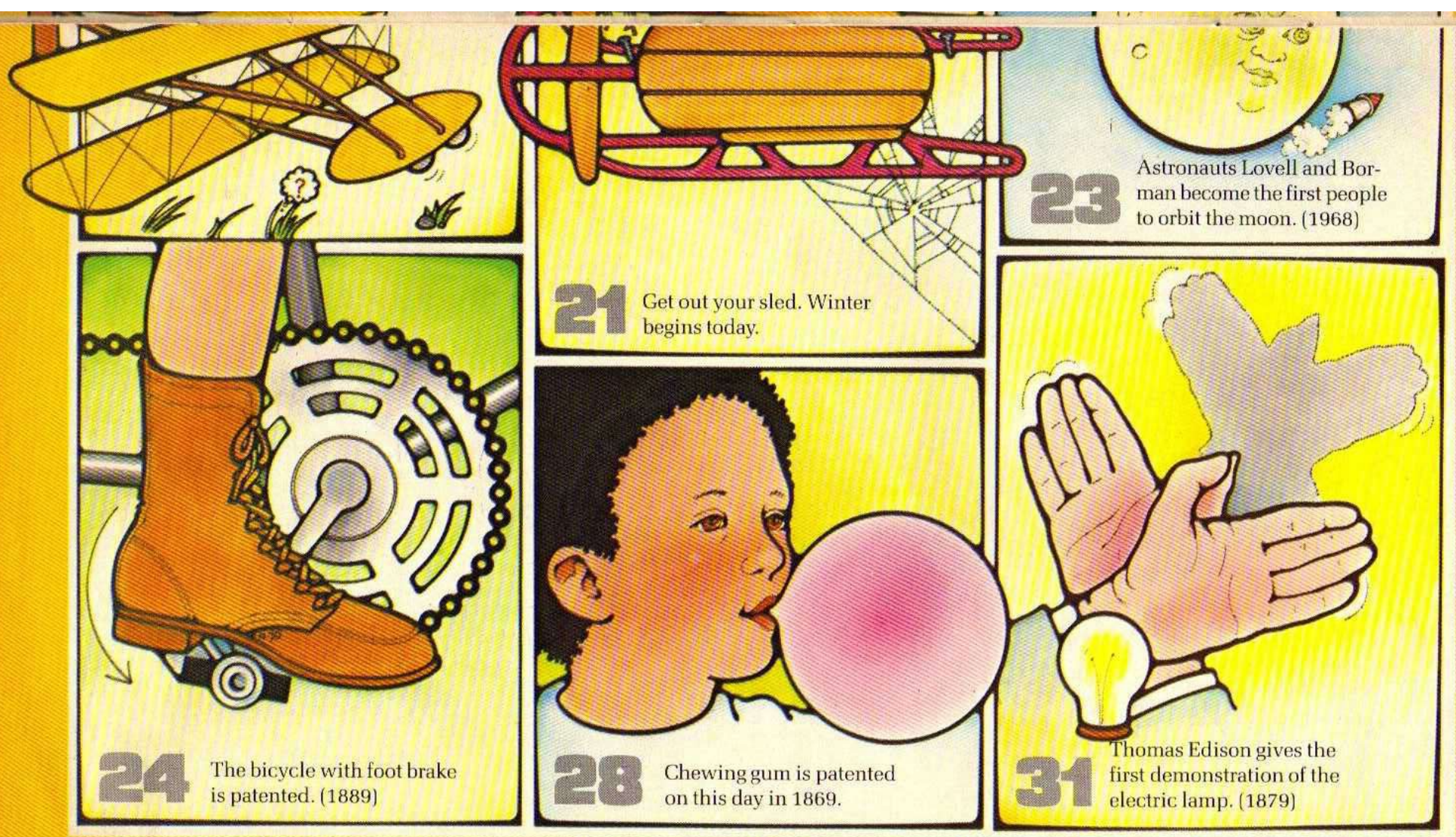
4 The *Atlantus*, the first U.S. ship made of concrete, is launched. (1918)

13 If the sky is clear tonight, you can see the Geminid meteor shower.

11 The first radio signal sent across the Atlantic is received by Guglielmo Marconi. (1901)

17 Wright Brothers Day. It's the anniversary of their famous flight in 1903.





21 Get out your sled. Winter begins today.

23 Astronauts Lovell and Borman become the first people to orbit the moon. (1968)

24 The bicycle with foot brake is patented. (1889)

28 Chewing gum is patented on this day in 1869.

31 Thomas Edison gives the first demonstration of the electric lamp. (1879)

Earth Days

December

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Any Questions?

How do penguins live at the South Pole without freezing?

All penguins live in the southern half of the world. But not even half of them ever set a flipper in Antarctica. There are 17 kinds of penguins. Only seven kinds live near the South Pole. The rest live farther away, where temperatures are at least a little bit warmer.

But all kinds of penguins, no matter where they live, are built to keep warm. Beneath their feathers, adult penguins have thick layers of fat to keep warm in cold air and cold water.

Newborn penguins are covered with *down*—tiny, fluffy feathers. At first, the down is not thick enough to keep a chick warm. Its parents protect it from the cold by sitting right on top of it! When the baby penguin is about four weeks old, its down grows thicker. It is ready to leave the nest.

Eventually, a young penguin's down will be replaced by tightly-packed feathers. By the time it is three years old, a penguin will also have all the fat it needs to stay toasty warm.

Question sent in by Donavan Vartorella, Norwalk, OH.

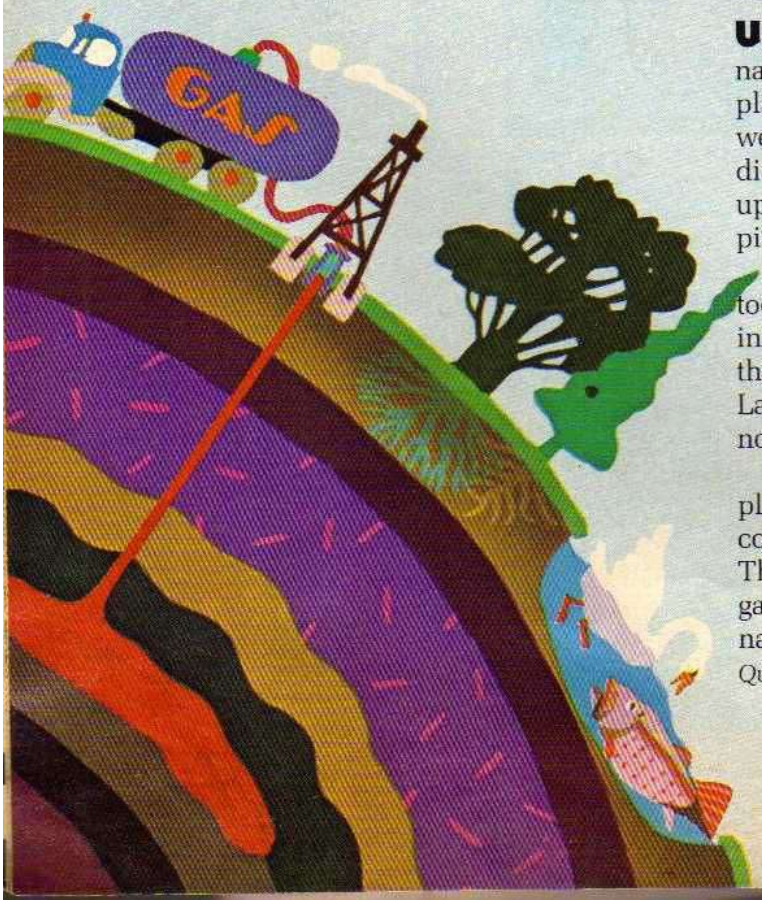
How does natural gas form under the ground?

Believe it or not, natural gas is made from the decayed remains of sea plants and animals. Millions of years ago, oceans were loaded with living things. As these critters died, they sank to the ocean floor. There they piled up in huge amounts. Mud and dirt, called sediment, piled up on top of them.

Over millions of years, great chemical changes took place on the ocean floor. The sediment turned into hard rock. The plants and animals turned into the natural gas and oil that people drill for today. Later, some of the ancient oceans drained away. So now oil and gas are found under land, too.

If you think you can get rich by pressing dead plants together to get fuel, forget it. It takes special conditions and loads of time for gas and oil to form. That's why it's so important to save as much natural gas and oil as possible. We're using it a lot faster than nature can produce it.

Question sent in by Betsy Powell, Cordell, OK.



Do you have a question that no one seems able to answer? Why not ask us? Send your question, along with your name, address, and age, to:

Any Questions?
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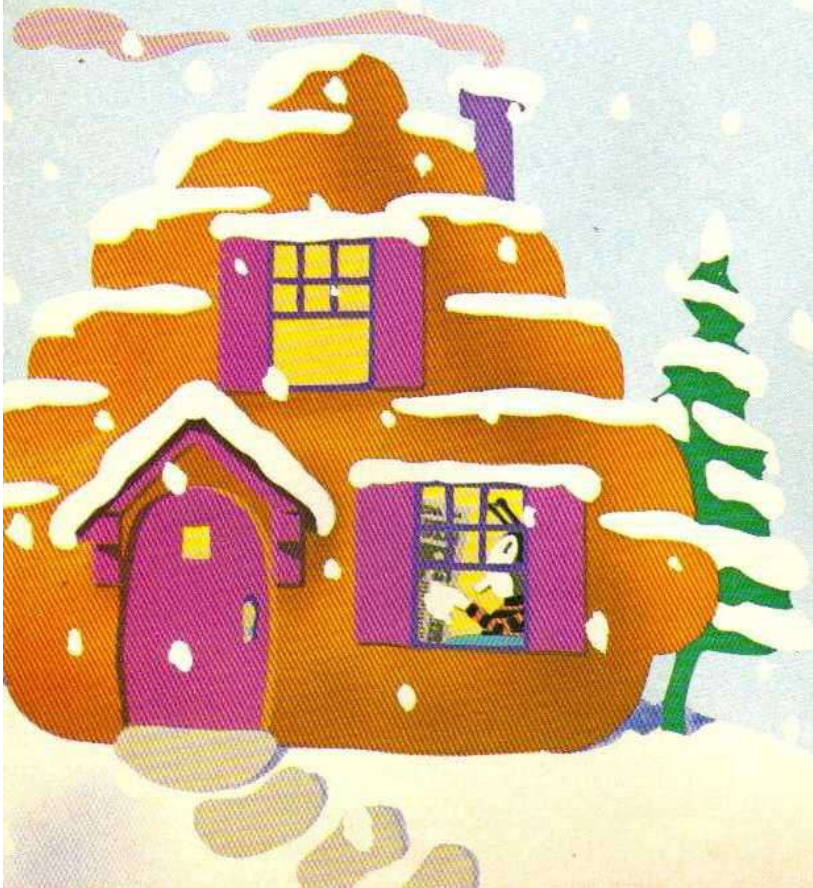
What causes stars to shoot through the sky and burn out?

When people see a streak of light flash across the sky, they call it a *shooting star*. But it isn't a star at all. It is a chunk of rock. This rock, called a *meteoroid*, can be as big as a boulder or as small as a grain of sand.

Meteoroids are particles from space, sometimes comets or asteroids. They pass through the earth's atmosphere. When they do, they are moving at very fast speeds. They race through air molecules and this causes friction. The rocks become so hot that they burn up. It is the light from these fiery bursts of energy that you see as shooting stars.

On a clear night you can see about 10 shooting stars every hour. But your chance of spotting shooters are better on certain nights of the year. The last three weeks in December is a very good time for shooting-star gazing.

Question sent in by Eric Hallberg, Boise, ID.



What do bees do during the winter?

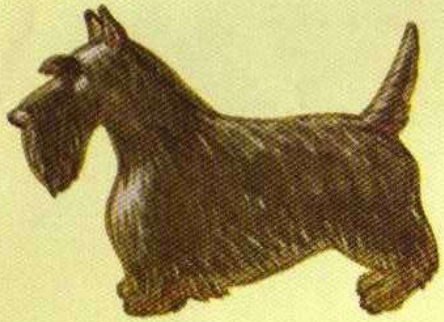
Bees start getting ready in spring and summer for the cold weather ahead. During those seasons they make the whole year's supply of honey. Some gets eaten right away. But half the honey is stored for later use—just as squirrels store nuts for winter.

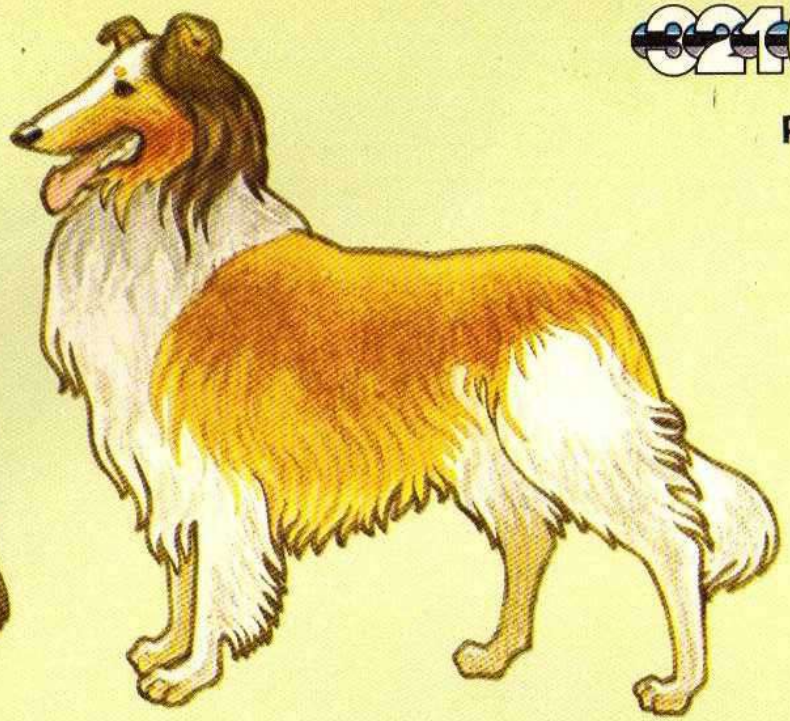
Before the cold sets in, bees have one last job. They must push some bees out of the hive and leave them to starve. It seems cruel, but these bees have to leave so that there will be enough food for the rest. The unlucky ones are a group called *drones*. They cannot help the hive during the winter. Next spring, new drones will be born.

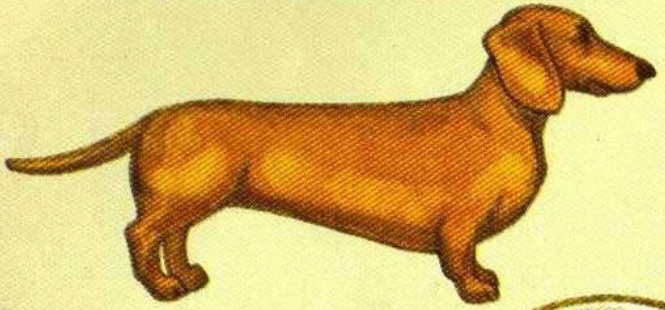
When winter starts, the queen bee and the workers gather in a cluster on the honeycomb. They beat their wings to keep warm. When the weather turns colder, the bees move into even tighter clusters. In a warm spell, they may fly outside. For food, the bees eat the honey stored in the hive. That's their reward for last summer's hard work, when they were as busy as bees!

Question sent in by Barry Thompson, Long Prairie, MN.

POSTER







How many of these dog breeds can you name?

Answers on page 37.

List of the Month

Town Tales

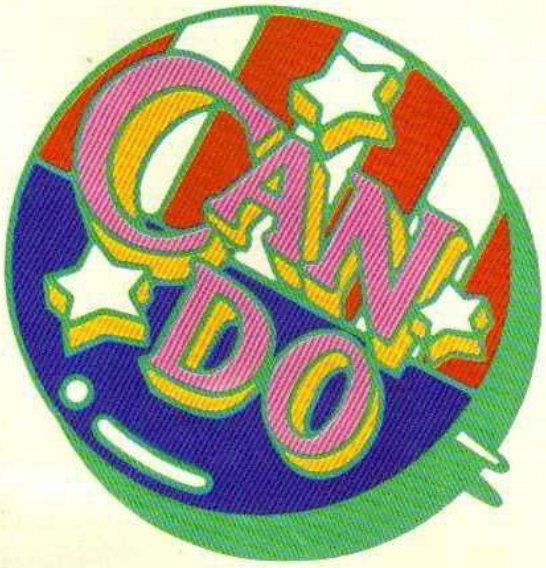
by Wendy Williams

Did you ever stop to think how your town got its name? Here's how eight got theirs....

Hold the Onions Around the late 1600s in Illinois, a swampy plain on Lake Michigan was full of stinking wild onions. The American Indians there gave the plain their name for place of onions—Chicago. Later, French settlers learned that the word "chicago" might also mean skunk. So, as a joke, they called the smelly new land Skunktown!

Congratulations, Martha In 1602, voyagers to the New World found many grapevines growing on a little island off the coast of Massachusetts. The most likely name for such a place would have been Vineyard. But one of the captains of the voyaging ship, Bartholomew Gosnold, had a young daughter named Martha. So, in her honor, he named the place Martha's Vineyard.

Anything You Can Do... In 1884, Cando (can-dew) was an unnamed village in North Dakota. Officials wanted to make it the area's center. Other towns thought they deserved the honor. At a meeting, people shouted out praises of their towns. Someone from the unnamed town yelled, "We'll show you what we can do! We'll make this town the county seat and name it Cando!" And they did.



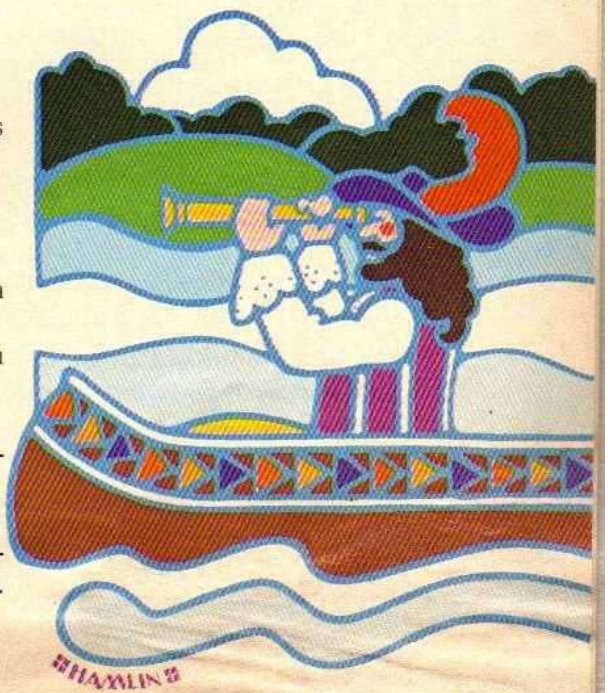
How Embarrassing! Don't think the people in Embarrass, Minnesota, are shy! About 200 years ago, French fur traders would trap beavers on a small river near where the town would be someday. Sometimes driftwood made holes in the traders' canoes. Upset by this, the French named the river *Embarras*, their word for obstruction. When a town grew near the river, it took the same name.

Pipe Town American Indians once crossed from New York into New Jersey, looking for certain stones. They used them to make their tobacco pipes. The Indians called this land *Hapoaken-hocking*, meaning "Land of the Tobacco Pipe." When Dutch colonists arrived in the early 1600s, they shortened the name to Hoboken. The Dutch said the new name was easier to pronounce.

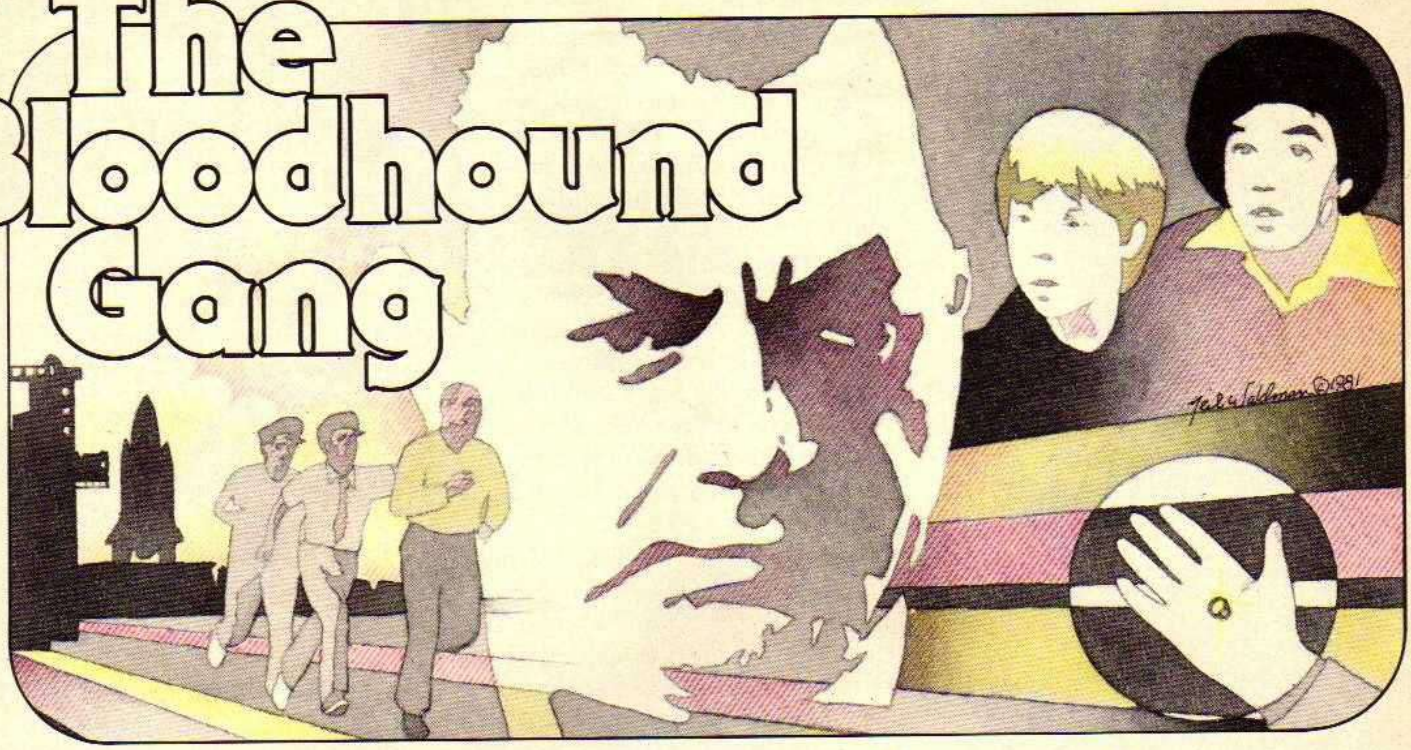
Yum! About 50 years ago, a gold miner in New Mexico wasn't finding very much gold. He put away his shovel and pick and bought a gas station. Business was slow so, in the off-hours, he sold freshly-baked pies to hungry motorists. Word-of-mouth made the pies famous, and the community soon became known as Pie Town. It still is.

Name That Town About 100 years ago, several families wanted a post office for their unnamed town. Officials in Washington said okay. But first the town needed a name. The town's residents were sent a form on which to write possible names. At the top of the form it said, "*WRITE IN INK.*" Many people did just that. They filled in "Ink" for the town's name, and Ink, Arkansas, got its post office.

Pretty River? No one knows for sure how Buffalo, NY, got its name, since there are no buffalo there. Around 1800, French settlers came to the area, near the Niagara River. Some people think the French exclaimed "Beau (Bo) Fleuve," meaning "Beautiful River." The American Indians there mispronounced the words as "Boo-flow." The mistake spread. In 1832, Buffalo became the city's official name.



The Bloodhound Gang



The Case of the Golden Lining

Part Three

by Madeline Sunshine

In our last episode, Vikki, Ricardo and Zack had joined with Dr. Phineas Fripp and Chief Security Officer Chaney to investigate the strange happenings at the Kennedy Space Center. While Ricardo, Zack and Officer Chaney had gone to check out three of their major suspects, Vikki and Dr. Fripp found they had invited more than a little trouble within the dark halls of the cargo area.

"Okay, little lady, how much do you know?" demanded the white-suited cargo worker, as he finished tying Vikki's hands behind her back. He motioned for her to sit down beside the already bound Dr. Fripp.

"Enough!" Vikki said boldly. "Enough to put you and your partner away for a very long time."

Dr. Fripp gave Vikki a questioning look.

"What partner?" growled the maintenance worker. "What makes you think I've got a partner?"

"It's no secret," said Vikki. "I saw the two of you signalling to one another outside the Space Museum earlier today."

"Yeah, well, I'm not saying you're right, and I'm not saying you're wrong," the man whispered. "Fact is, I'm not saying anything until I find out what else you know."

"We know you're the ones who substituted the toy visors for the real ones," Vikki told him. "And we also know that the real visors are right there, in that carton. You made it look like the carton was nothing but garbage, so no one would think twice when you carried it out to be dumped. But you weren't going to dump it, were you? You weren't going to dump it at all."

"What were you going to do with those visors?" asked Dr. Fripp.

"I don't have to answer your questions!" the man said. "All I've got to do is decide what I'm going to do with the two of you!"

"I'd advise you to leave us alone," warned Fripp. "Our friends know where we are and they're bound to come looking for us."

"Oh yeah?" the maintenance man growled. "Well, looking for you and finding you are going to be two different things. You see, my friends, you're about to go on a little trip. You're going to be my science project on the space shuttle." He laughed an unpleasant laugh as he forced Vikki and Dr. Fripp to get up. Then he began pushing

them toward another deserted cargo room.

Vikki Leaves a Clue

"I've got to think of something," Vikki said to herself, trying somehow to stall for time. She pulled at the ropes that were binding her hands. But it was no use; they were too tight. Then suddenly, she had an idea. She wriggled a small, gold ring she was wearing off of her finger.

"Move it, miss!" the man shouted at Vikki. With one last look at the ring on the floor, she followed Dr. Fripp out of the room.

Meanwhile, Ricardo, Zack and Officer Chaney were busy following Jason Jennings and the man with the camera, both of whom had just broken away from the tour. Jennings was hurrying along a path that led back toward the Astronaut Training Building. The man with the camera was tagging behind, trying not to be spotted.

"Hey," said Zack, as they followed their suspects past the Astronaut Training Building. "It's a little over an hour since we left Vikki and Dr. Fripp. They should be here waiting for us already."

"They probably got held up," said Ricardo. "We'll come back for them as soon as we know where Jennings and the camera guy are headed."

They walked on and on. At last, Jennings stopped at a small clearing near a picnic area. He checked his watch. Then he sat down on a bench and began to look around nervously. What he didn't see was the man with the camera, who hovered nearby behind some bushes.

"Listen," Zack whispered to Officer Chaney. "Why don't you wait here and watch these two, while we go back for Vikki and Dr. Fripp?"

"Okay," said Chaney. "Only make it quick. Who knows how long they're planning to stay put?"

When Ricardo and Zack got back to the Astronaut Training Building, Vikki and Dr. Fripp still weren't there. "I'm getting worried," Zack told Ricardo. "Vikki's not usually late, unless . . . ."

"I know what you mean!" Ricardo broke in. "Let's go!"

They raced off to the cargo area and searched one room after another. At one point, they passed a white-suited maintenance worker who was pushing a handtruck, with two oversized trunks on it, toward the space shuttle's loading dock.

"Hey, he looks familiar," Zack said. "And besides, I thought they finished loading the shuttle months ago." Ricardo shrugged, as he motioned for Zack to follow him down one last hall.

After peeking into room after empty room, they were beginning to feel even more worried than before. Then, just as they were about to give up, Ricardo spotted a round gold object lying next to a raggedy-looking carton. He bent down and picked it up. Slowly, he turned it over in his hand.

"It's hers!" shouted Zack. "It's Vikki's!" He knelt down to search the area where Ricardo had found it. As he did, he bumped into the raggedy-looking carton. Instead of tumbling over, like most empty cartons would have done, this one didn't budge. Zack peered into it. As he did, he pushed aside some of the dirty newspapers that lined it.

"Holy cow!" he cried. "Look at these visors!" He lifted one out of the box. "Heavy," he remarked to Ricardo. "Much heavier than those plastic imitations."

"Wow! You're right," said Ricardo, taking one out. "In fact, these are even heavier than the real visors Dr. Martels showed us."

"They're different in another way, too," said Zack, examining the inside of the visor. "See? There's a metal frame built all around the edge." He chipped away some of the paint covering the frame. Suddenly, he jumped up. "Ricardo!" he shouted. "I think we're looking at pure gold!"

"Of course!" exclaimed Ricardo. "Gold is dense, or heavy. That's why these visors weigh so much more than the real ones."

"Yup!" agreed Zack. "So it looks like robbery was our motive after all. Someone must have stolen gold and hidden it in these visors. Someone who works in the factory that makes them, I bet."

"Hey, yeah! And someone who works here at the space center must have been involved, too. Whoever it was must have taken these real visors off the helmets they belong to and replaced them with the toy ones we found," Ricardo reasoned.

The Chase Begins

"Wait! If it was someone here who pulled the switch," said Zack, "I'd guess it was a maintenance worker assigned to the cargo area, and that means . . . ." He sprang to his feet without finishing his sentence. "Oh no!" he cried. "Vikki and Dr. Fripp . . . I bet they're with that maintenance worker we saw—the one who was pushing those two tremendous trunks!" ➳

He and Ricardo sped toward the shuttle-loading area, where a few moments earlier they'd seen the maintenance worker. As they stepped onto the ramp, an alarm went off. Then, just as they spotted the man they were looking for, huge floodlights shot their laser-like beams along the loading dock. Several security guards came running out beyond the ramp. In a panic, the maintenance man let go of the trunks he was pushing and ran.

"Get him!" Ricardo shouted. "Get him!"

The running man didn't stand a chance. While two security officers opened the trunks, letting an overjoyed Vikki and Dr. Fripp step outside, another two officers cuffed the maintenance worker and dragged him away.

The next morning, the Bloodhound Gang, along with Dr. Fripp, Officer Chaney and Jane Morrow, the reporter they'd met on the tour bus, were sitting around having breakfast.

"You people have given me a great story. Maybe they shouldn't scrap this program after all," Jane chuckled. "But," she added, growing serious, "there are still a few things I don't understand. For instance, how did the gold get into the visors?"

"I'll answer that one," said Vikki. "Jason Jennings worked for the company that made the space helmets. Since his job was to spray the thin coating of gold onto the visors, he could enter the vault where the company kept its gold supply. One day, I guess he got greedy. He decided to take advantage of his trusted positon. His scheme was to smuggle the gold out by hiding some in each of the visors shipped to the Kennedy Center. And, as you know, his partner in crime was waiting here to help him carry out his plan."

"We spotted Jennings yesterday," Zack added, "when we saw him signalling to a maintenance worker. We weren't sure what it meant at first. But it turned out to be one of our best clues."

The Man with the Camera

"Whew!" said the reporter. "That's really something. Every loose end seems to be tied up so neatly."

"Except for one," said Ricardo. "The man with the camera.... We don't know who he is."

"Speak for yourself," said Zack. "I know who he is." The boy stood up and motioned toward a corner of the cafeteria. Catching sight of him, the man with the camera waved and walked over.

"This is Officer Jake Willis," said Zack. "Head of security for the company Jennings worked for."

"Pleased to meet you all," said Willis. "I've been shadowing Jennings for quite a while now, as young Zack may have already told you. We suspected he planned the gold theft, but we couldn't prove it. But, thanks to you, everything has been cleared up. What people say about you three is true," he continued, turning to smile at Vikki, Ricardo and Zack. "Whenever there's trouble...."

"We're there on the double!" the Gang chimed in.

"And don't forget about me. I'm ready to join you whenever you have need for a physicist at large," said Phineas Fripp.

"We won't forget," said Vikki.

"Hey," said Zack, looking at his watch. "The shuttle will be taking off in an hour. We'd better get to our seats on the observation deck."

"By the way, Zack," said Dr. Fripp, "I never did get a chance to ask you what your science project is about."

"It's an experiment with live fish," Zack replied.

"Any special kind of fish?" asked Officer Chaney.

Zack and the rest of the Bloodhound Gang looked at one another and laughed. "Would you believe *gold*fish?" they said.

Next month begins a brand new adventure starring the Bloodhound Gang!

Do It!

Cat Hunt

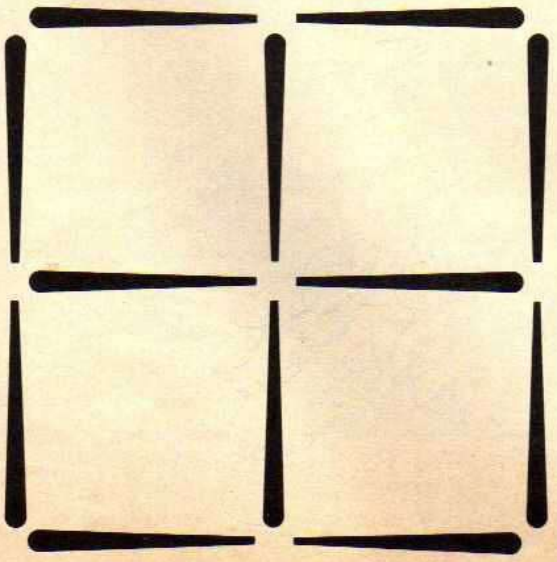
The names of different kinds of cats are hiding here. Look for the ones in CAPITAL letters. Get all 15 for a purr-fect score!

ABYSSINIAN
ALLEY
ANGORA
BLUE Persian
BRITISH Blue
BURMESE
CALICO
HIMALAYAN
MAINE COON
MANX
PERSIAN
REX
RUSSIAN Blue
SIAMESE
TABBY

E	K	N	A	I	S	S	U	R	M	K	S
C	S	Y	G	I	O	B	D	E	T	B	M
A	A	E	D	H	Y	L	W	J	F	U	A
N	B	L	M	R	H	U	S	H	H	I	I
L	R	L	I	A	P	E	R	S	I	A	N
I	I	A	K	C	I	L	E	T	M	A	E
A	T	L	M	V	O	S	N	A	A	C	C
R	I	L	M	I	E	H	N	B	L	U	O
O	S	D	M	M	D	X	N	B	A	L	O
G	H	E	R	S	B	E	L	Y	Y	A	N
N	O	U	E	L	C	R	O	P	A	D	K
A	B	Y	S	S	I	N	I	A	N	O	W

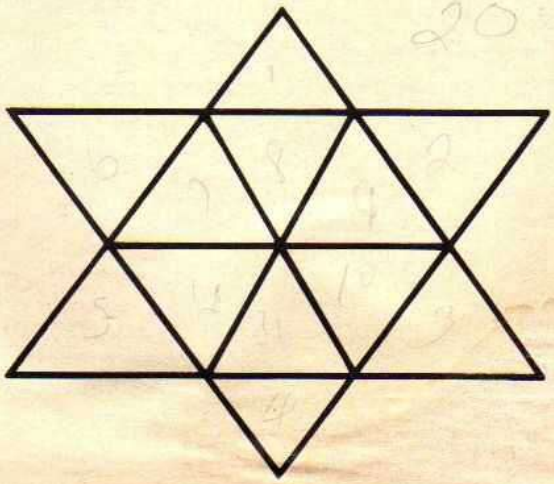
Toothpick Trick

Arrange 12 toothpicks into four squares as you see here. Then remove two toothpicks to leave just two squares.



Triangle Teaser

How many triangles can you find in this star?



Answers on page 37.

Feet

by Megan Stine and H. William Stine

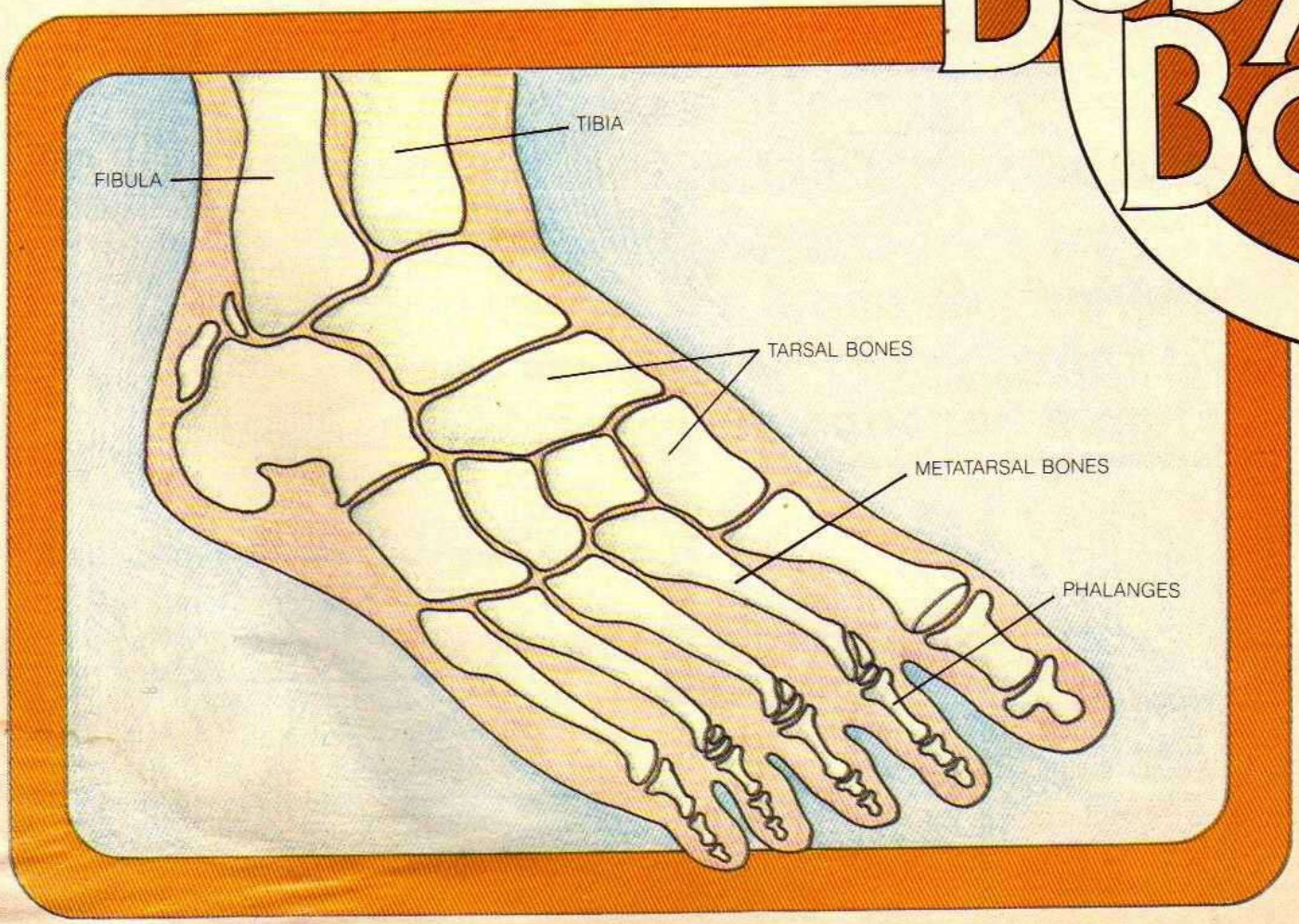
This month's *Busy Bodies* salutes a part of the body that takes a lot of abuse. Every day you step all over them. You push them into crowded spaces where they sometimes can't breathe. And then, to make them feel better, you give them a sock. So stand up and give a cheer for your favorite underdogs—your feet.

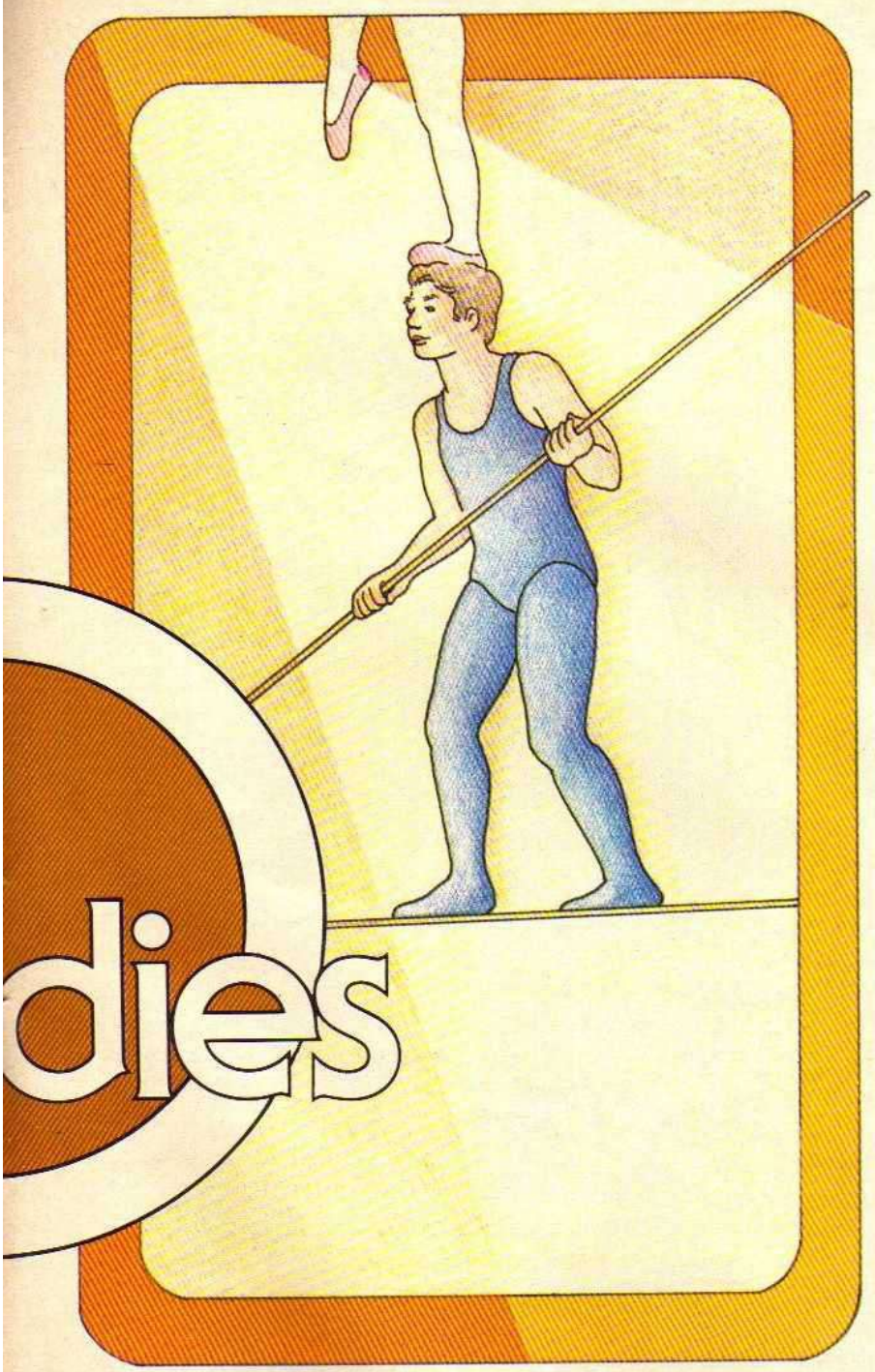
Meet Your Feet

Well, there they are—right under your ankles where you left them. Before they run away, why not take off your shoes and socks and meet your feet? Use your hands to say hello to them. After all, your feet have a lot in common with your hands, except feet aren't so good for playing the piano. Wiggle your toes and bend your feet. Notice how flexible they are—just like your hands! This is due to all the tiny little bones, and the muscles and tendons which hold them together.

The real heroes of your foot are on the inside—the bones. And there are three types of these hard workers. In back are seven *tarsal* bones. They form the heel, and also connect the foot to the ankle. The heel bone may be the strongest bone in the body. It better be! It supports most of your body's weight. The bones in the middle of the foot are called *metatarsal* bones. There are five of them in each foot. Together, the metatarsals and the tarsals form the sole of the foot and the arch. (The arch is the curved place under your foot. But *you know* what arches are—you've been to McDonald's!) The toes have 14 bones called *phalanges*. So that means, big or small, each foot has 26 bones in it. Put them together with the bones in your hands and you'll have more than half the bones in your whole body.

BUSY BO





Fancy Footwork

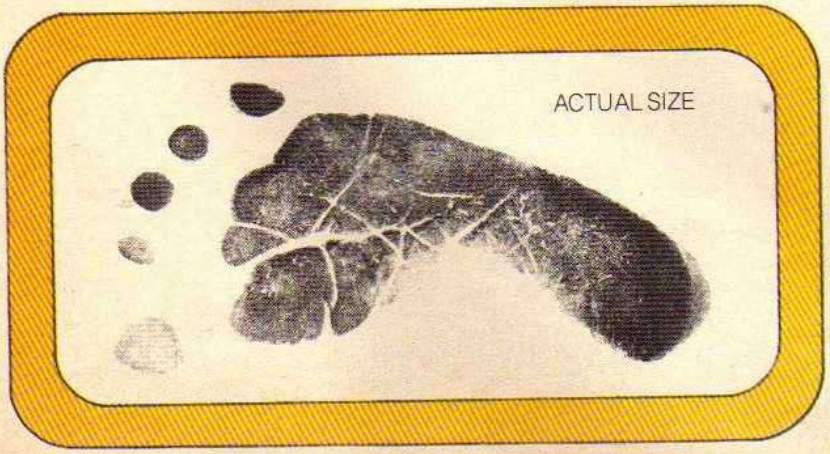
Your feet help you walk, run and jump because they bend, twist and grip so well. But your feet bones are more than just flexible. They're strong, too. They have to be. They take quite a pounding. For example, when you run a mile, each foot hits the ground more than 1,000 times. Why don't your feet bones turn to dust after all of that? Your feet act like cushions. They absorb most of the pounding as they hit the ground. They don't send pain messages to the brain unless something is seriously wrong.

But that's not all. You also use your feet for another very important job—standing up. On this one, your ears, brain and feet are a close-knit team. You get your sense of balance from messages that travel from the inner ear to the brain. But your feet do the work, adjusting and flexing to keep you straight. Best of all, most of this work goes on without your knowing it. If it didn't you would probably spend most of every day trying to stand on your own two feet!

Keeping Tracks

What do babies and crooks have in common? *Prints*. Police use fingerprints to keep track of criminals and suspects. Doctors in hospitals use *foot*prints to keep track of babies. Like fingerprints, footprints are one of a kind. So they make an ideal record for a new-born baby. And baby footprints don't take up much room. They are only about three inches long.

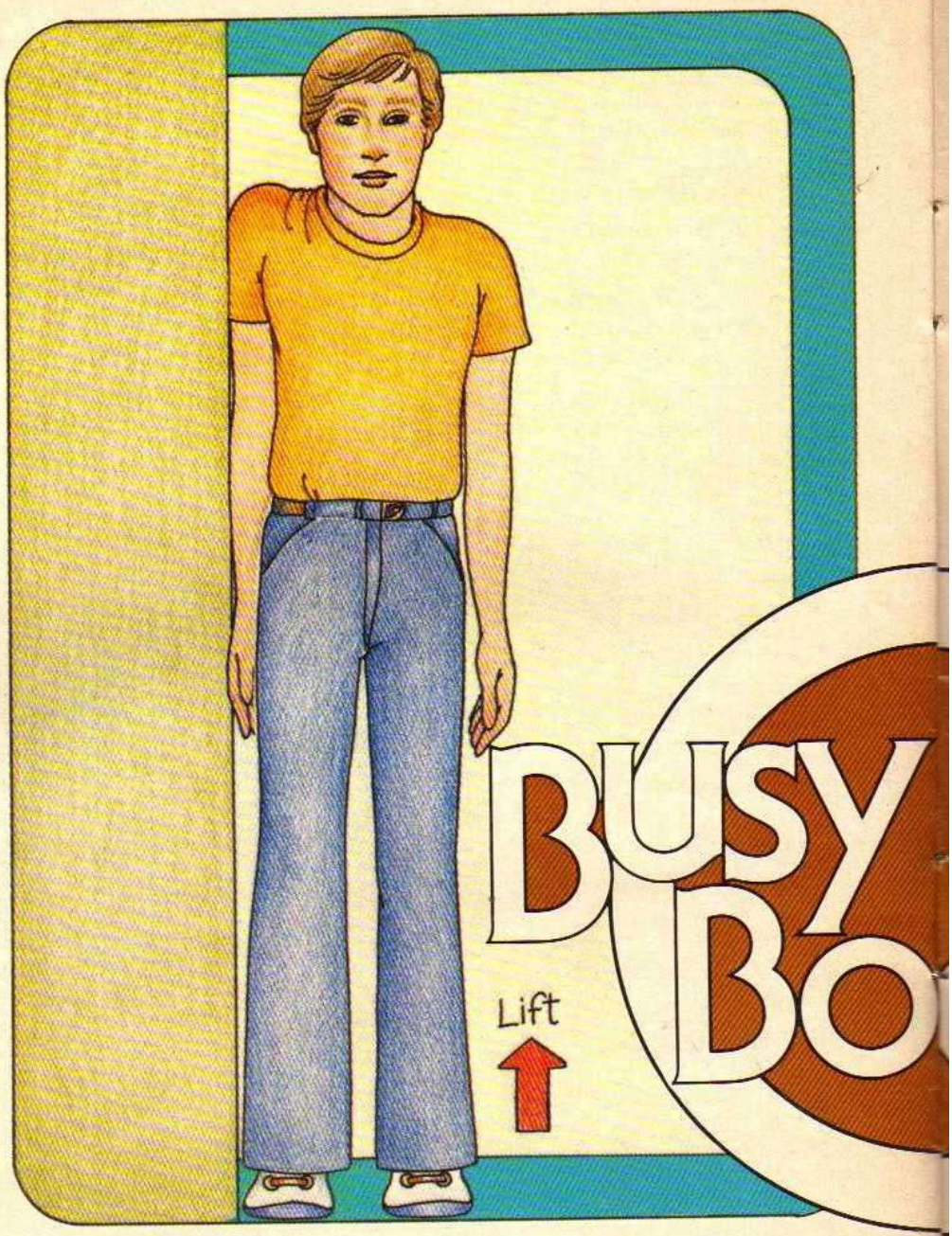
Your footprints are even more interesting. They can tell you a lot about how you walk. Back to the police again: footprints at the scene of a crime can often tell the police whether someone was walking or running away. Try it yourself by jumping down from a short ledge. Then run or hop through some muddy ground. Now walk slowly for a while. Compare all of these different tracks. Did you know that a really good detective could tell how much you weigh just by looking at your footprints? ➳



Unbalancing Act

Here's a little trick that will show you how to keep your balance. Stand next to a wall. Get as close as you can. The outside of your foot should touch the bottom of the wall. Now lift your other foot and try to keep your balance.

No matter how hard you try, you tip over. In order to stand on one foot, you must be able to shift all your weight onto it. Usually this is easy. But in this case, the wall gets in the way. You just can't do it.

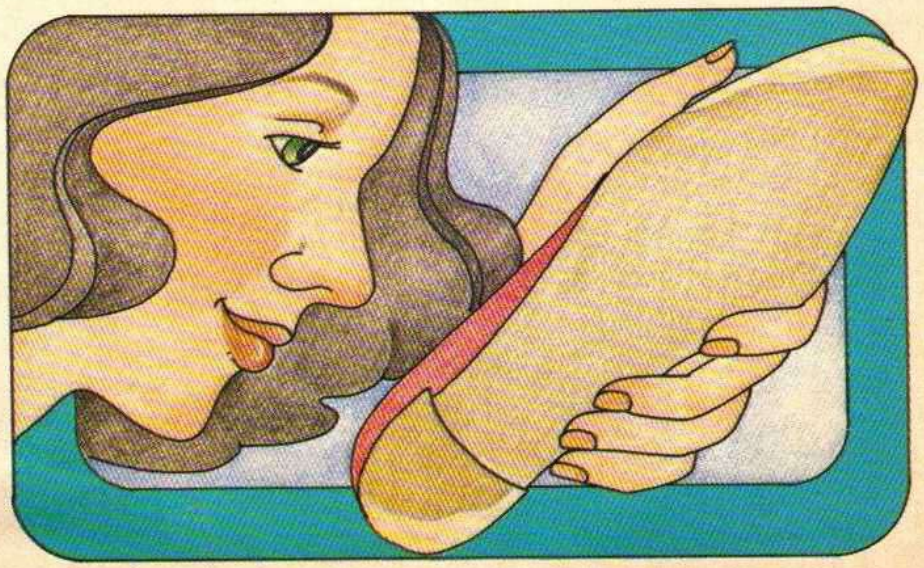


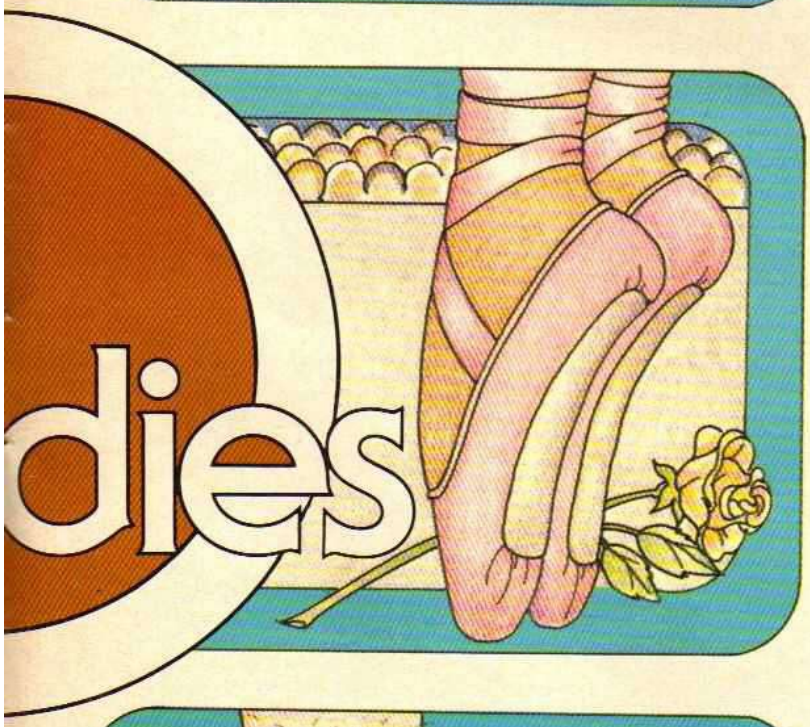
Step One and Step Two

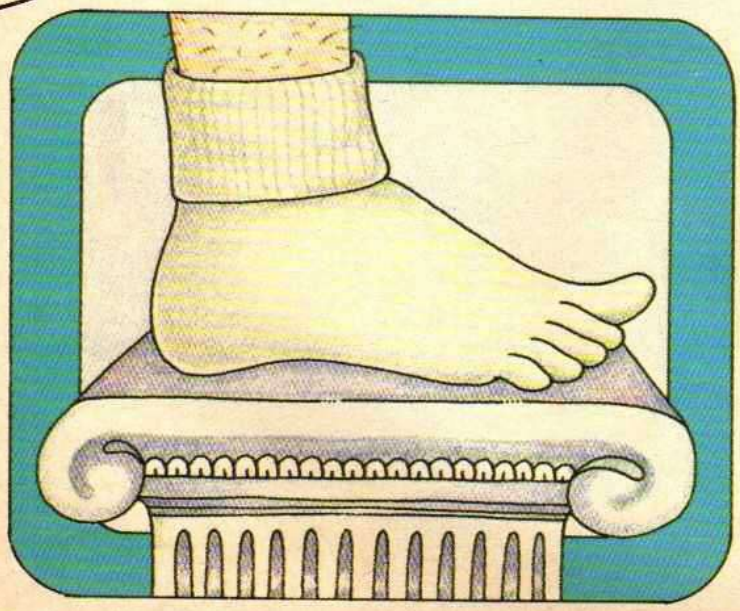
Here are two quick ways to find out more about how you walk. First, take a look at your shoes. In fact, why not be nosey? Take a look at everybody's shoes in your family. If the heel on your shoe is wearing on the outside edge, guess what? That's the way it should be.

When you take the best and most comfortable walking step, you should be leaning on your heel first, then the outside edge of your foot, then across the ball of your foot, and ending up on your big toe. Since most of your weight is carried on those outer edges of your feet, your heels are supposed to wear down unevenly.

The next quick test involves lying down on the job. So go ahead. Lie down on your back and relax your legs. If your feet point straight up, you're a straight-ahead walker. And that's best too. If your feet point out, it means you "toe-out" when you walk. That's okay, too. But toeing in is called being "pigeon-toed." It might be all right for pigeons, but it's definitely bad for your posture.







Look, Ma, No Hands!

Use your head, and figure out which sport uses no hands—just heads, bodies and feet. The answer is, of course, soccer, and it's the most popular sport in the world. Outside the U.S., soccer is called football. Why not? After all, it's played mostly with the feet.

Soccer players can dribble with their feet, or pass with their feet. But best of all, they can scoop up the ball with one foot and then kick it over their heads backward—in one smooth move, too!

On Your Toes

One place people love to take their feet (or have their feet take them) is onto a dance floor. But while disco might be difficult, the toughest type of dancing is done on your toes. We're talking about ballet. It is such an unnatural way to use your feet, that it takes years of training before your toes are strong enough to hold you up. Ballerinas are very picky about their toe shoes. They sew the laces on themselves. Sometimes they spend hours bending their shoes into just the right shape. Even so, toe dancing leaves their feet knobby, blistered, and sometimes even bleeding. So if you think ballet looks difficult and pretty—you're right. But underneath those pretty toe shoes, ballerinas have some *very* painful feet.

A Few Fast Footnotes

1. Apes can grab things with their feet because their big toes are opposable. Their big toes act like our thumbs and face the other toes.

2. There are more sweat glands in your feet and hands than anywhere else in your body. In fact, your feet sweat about a glass of water a day.

3. In ancient Rome, socks had a place for each toe, just like gloves do.

4. *Your* feet will probably be bigger than your mom's or dad's. With each generation, the average foot size in America gets larger!

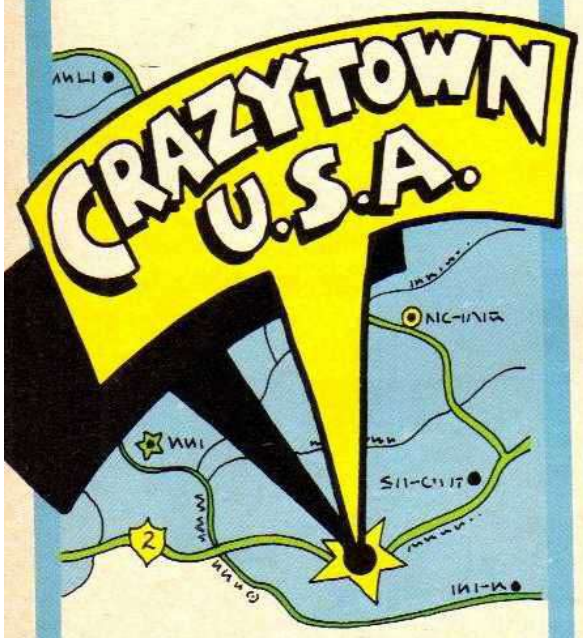
5. The *biggest* shoe ever made was size 42, built for the giant Harley Davidson, of Avon Park, Florida.

6. Most feet are *less* than a foot long! For instance, the average woman's foot is 8 inches long. The average man's foot is 11 inches long.

7. In a marathon race, each runner takes over 50,000 steps!

Reviews &

Here are some books to read and some things to do and see after reading this issue of 3-2-1 CONTACT.



3-2-1 CONTEST

In *List of the Month* you read about some of the crazy ways places got named. Who knows? Maybe there's a way-out story behind how your town or state got its name. If you know the real story, write and tell us about it. Or, if you're the creative type, make up a story. Be sure and tell us if your story is the whole truth or a tall tale. We'll pick our favorite true stories and our favorite made-up ones. If we pick yours, we'll send you a CONTACT T-shirt. Send your story, name, address and T-shirt size to:

Place Names
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

Museum of the Month

This review was sent in by Jennifer Smart, Marblehead, MA.

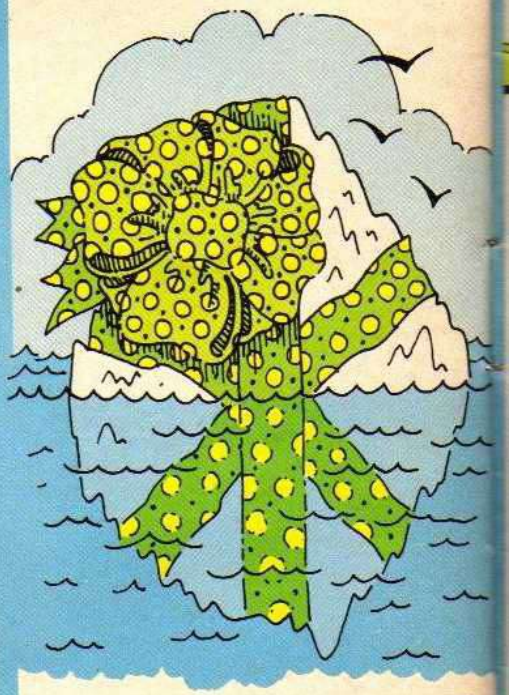
This is a review of the Children's Museum in Boston, MA. It is a great place to visit, and it's not only for children. There is a real manhole that you can go down, a doctor's and dentist's office and an attic where children can go and see old-fashioned items. You can see a display of doll houses and games, too. The museum is built so that it is very easy for people in wheelchairs. There is a small fee but it is worth it.

Been to a museum lately? Why not write a review of 100 words or less for CONTACT. If we use yours, you'll get a T-shirt. Send your review, along with your name, address and T-shirt size to:

Museum Review
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

The Incredible Shrinking Ice Cube

In *Earth Works* you read about a plan to tow icebergs to areas that need water. But this will work only if people can keep these huge blocks of ice from melting. Suppose you were the scientist in charge of the operation. Could you do it? Try this and find out:



Take a bunch of ice cubes that are the same size. Wrap each one with its own covering. Use things like newspaper, different colored cloth, plastic wrap and foil. Put all the wrapped cubes and one unwrapped one on a tray in a warm place. Now watch and see which one lasts the longest.

After you finish, see if you can figure out ways to make your "icebergs" last even longer. After all, it's a long way from Antarctica to Arabia!

Previews

Bloodhound Books

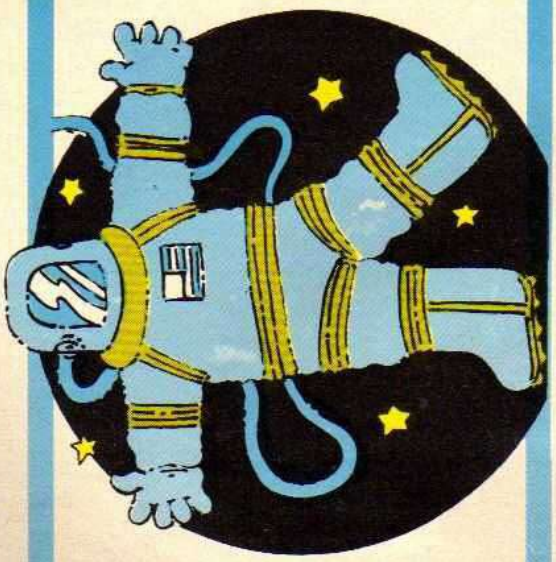
Here's good news for fans of the *Bloodhound Gang*. Now you can read about the adventures of these kid detectives in CONTACT —*and* in a series of books written by Sid Fleischman and published by Random House.

1. The Case of the Flying Clock A jewel-covered clock is stolen and the police are stumped. Could they be overlooking a hidden clue? The Bloodhound Gang thinks so. Find out how a little science helps them sniff out the crook.

2. The Case of the Secret Message An old woman is kidnapped. She leaves behind a strange purse with a coded message. Can breaking the code save the old woman's life? That's what the Gang must figure out before it's too late.

3. The Case of Princess Tomorrow Princess Tomorrow claims she can predict the results of horses races *before* they happen. Can she really tell the future or is she just a fake? It's up to the Bloodhound Gang to find out.

4. The Case of the Cackling Ghost A woman in a wheelchair is frightened by the sound of ghostly laughter in her house. Everyone thinks she's crazy. There are no such things as ghosts—or are there? Sounds like another case for the Bloodhound Gang.

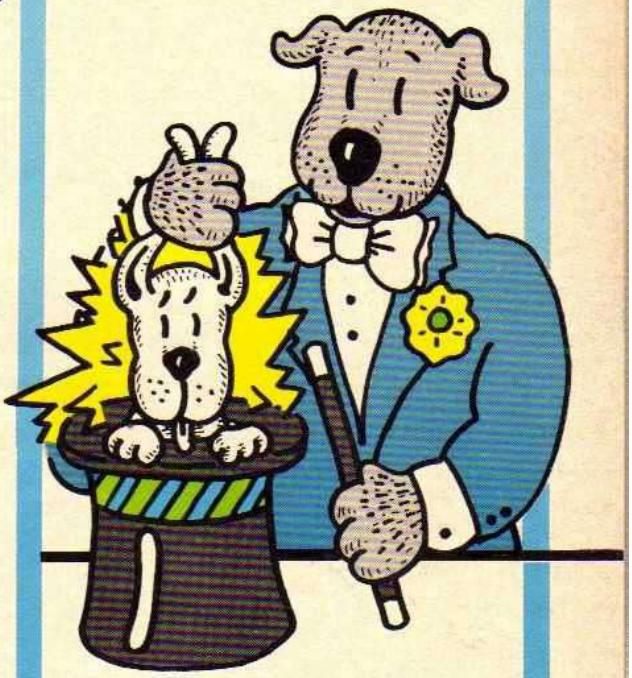


Free Shuttle News

Would you like to learn more about the space shuttle and the space suits that shuttle astronauts wear? NASA has two free pamphlets that will give you all the facts. Just write to:

NASA Headquarters
Code HNS-27
Washington, D.C. 20546

Ask for the *Educational Briefs* titled, "Space Shuttle Statistics" and "Shuttle Space Suit."



Tricky Dog Tricks

There's no magic in teaching your old dog a new trick. All it takes is a lot of patience—by you *and* your dog.

Suppose your pooch likes to sleep under the kitchen table. As soon as he goes there, say "Go lie down," over and over. Then pet him so he'll know you liked what he did.

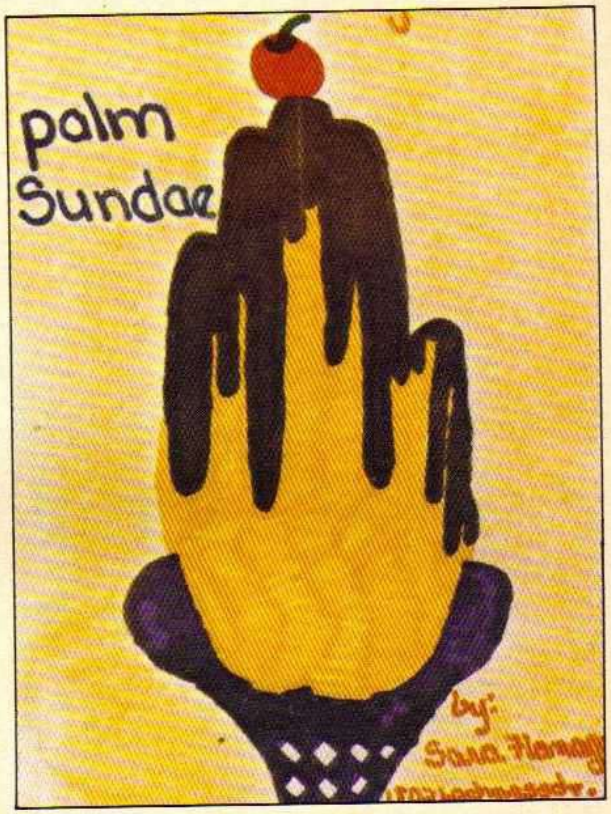
Do the same thing every time your dog heads for his favorite sleeping spot. Before too long, he should get the idea. Now when you say "Go lie down," he will do just that. Neat trick, huh?

MAIL

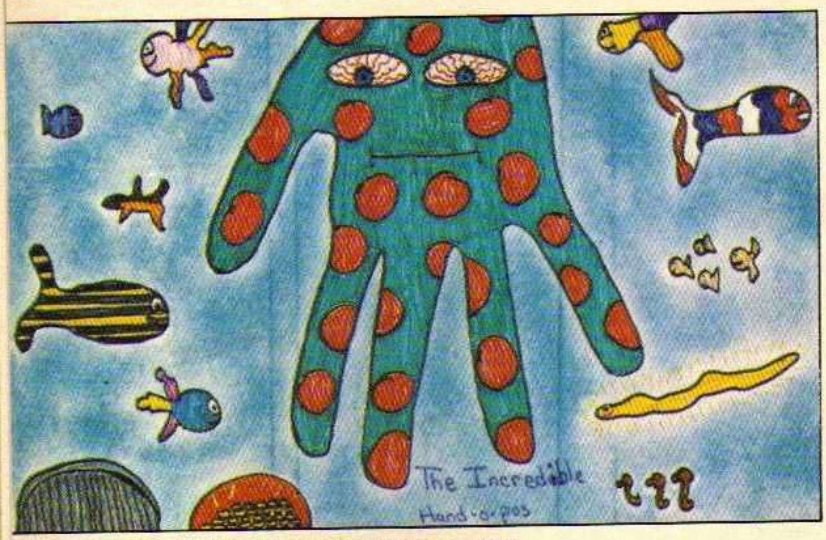
Hand Contest Winners

The hand drawings that you sent in were great. We enjoyed all of them. Here are some of our favorites:

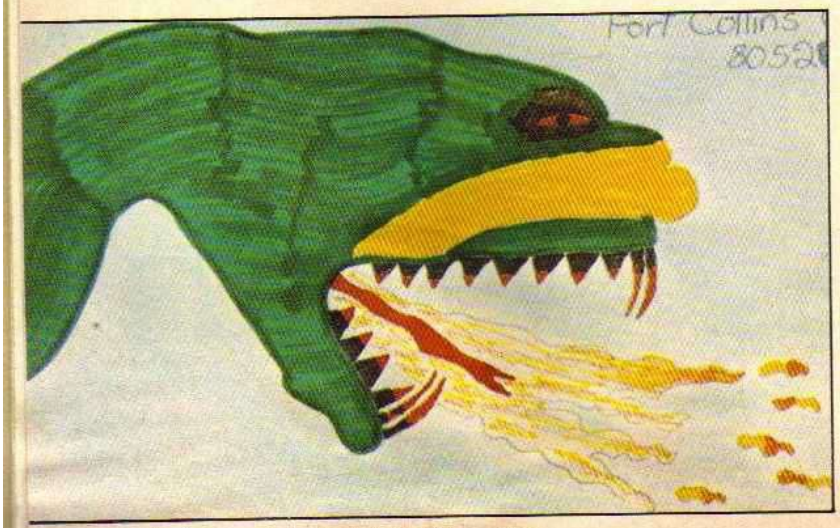
Lori Lockard, Urbana, IL.



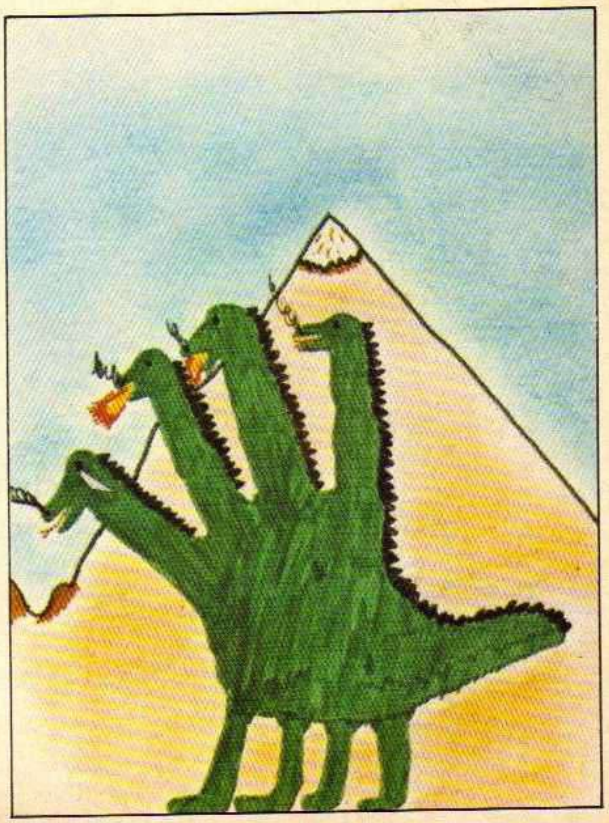
Sara Flanagan, Rawlins, WY.



Nancy Beninati, Bay Shore, NY.

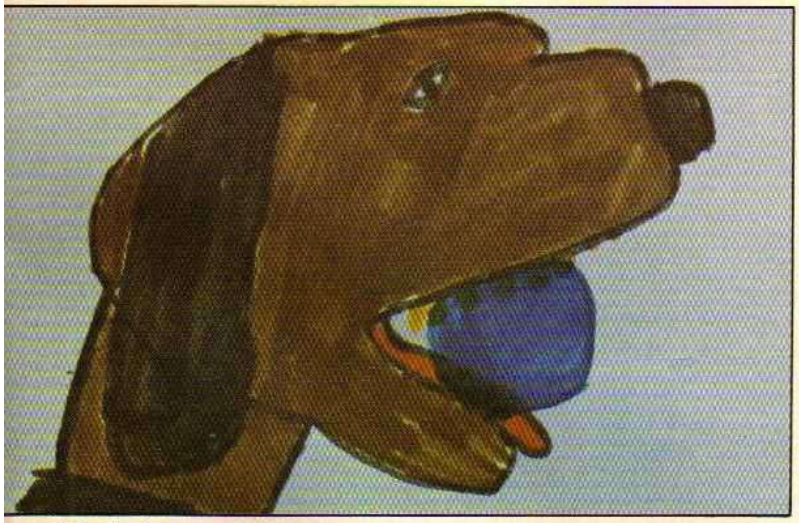


Rafa Sandoval, Fort Collins, CO.

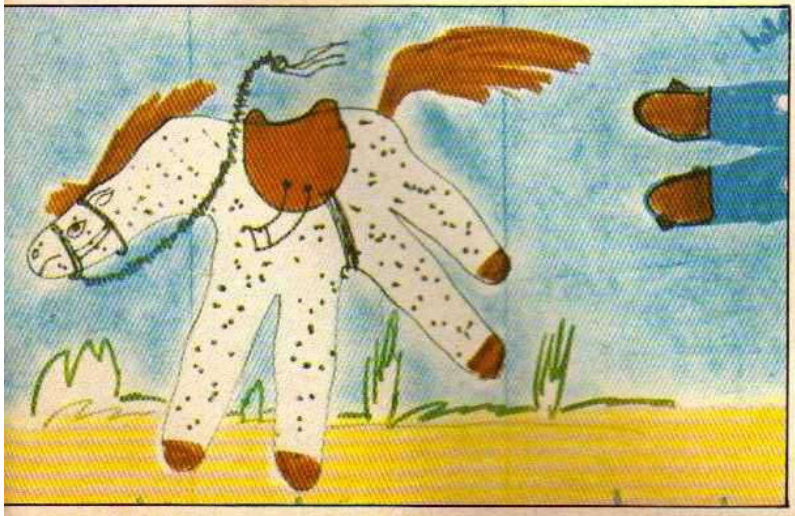


Gregory Prospero, Miami, FL.

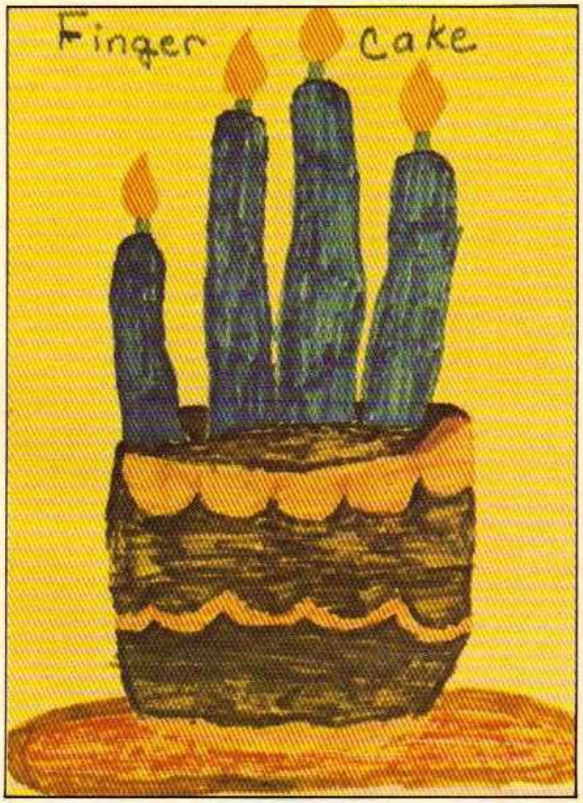
Kristin Wrabel, Upper Marlboro, MD.



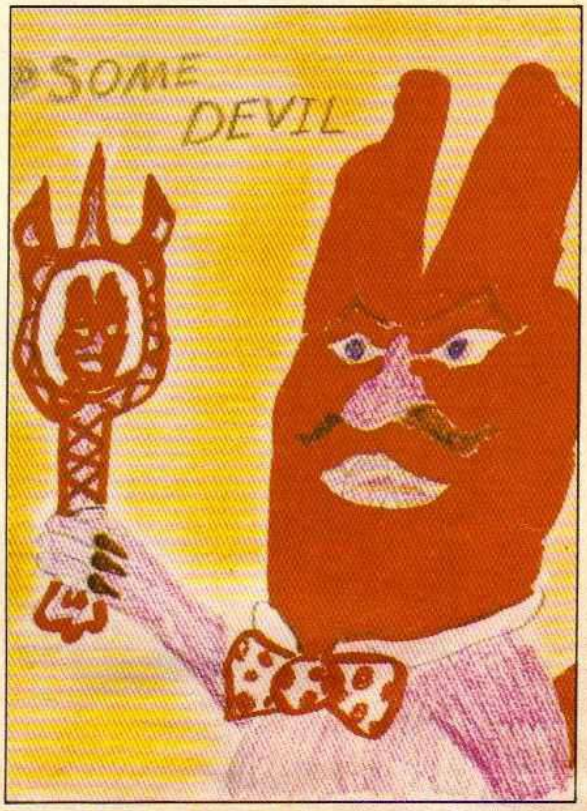
Tania Gregory, Aiken, SC.



Katie Blakeslee, Portland, OR.



Valerie Trudeau, Greenville, PA.



Jeffrey Mellin, Reading, MA.

Experiment

Growing Crystals

When you think of crystals, you probably picture shiny gems like diamonds. But some of the most common things around your house are crystals, too. Here's how to get two of them—salt and sugar—to make beautiful crystal shapes in water.

What You Need

salt
sugar
water
a spoon
a small pot
2 glasses
2 pencils
2 paper clips
string or thread
tape
measuring cup

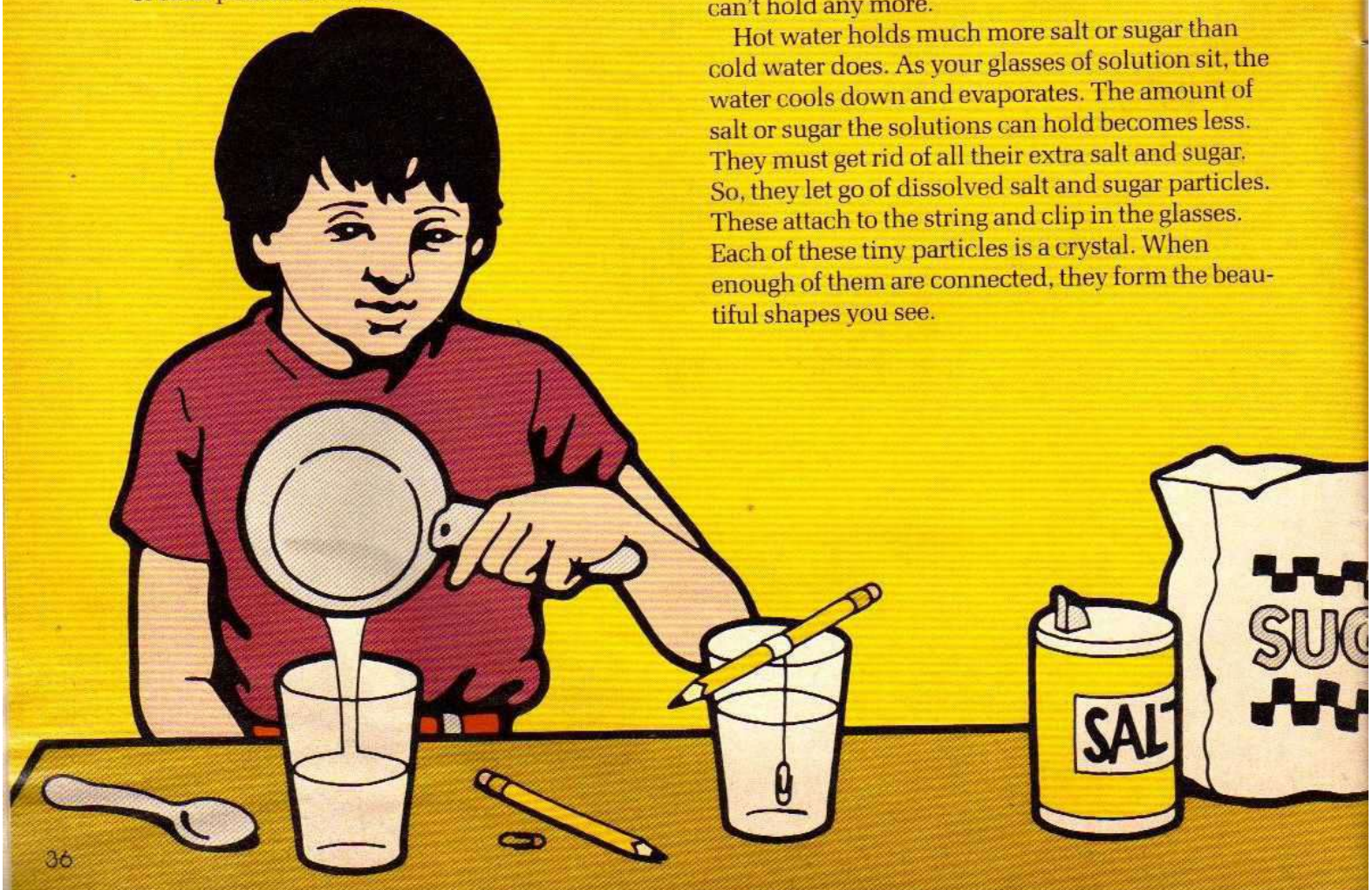
What You Do

1. Tie pieces of string to ends of clips.
2. Tape the other end of each string to the middle of each pencil. Set aside.
3. Boil a cup of water. Remove pot from heat.
4. Stir in sugar a few teaspoons at a time, until no more will dissolve. You'll need between one and two cups of sugar.
5. Pour the sugar water into one of the glasses. Hang the string in the glass as you see in the picture. Don't move the glass.
6. Repeat steps #3, 4 and 5, using salt instead of sugar. (The salt water will not be as clear as the sugar water.)
7. After a while you should see sugar and salt crystals forming around the string and clip in each glass. Be patient, especially with the sugar. It can be two to three weeks before crystals form.

Why It Works

When you dissolve loads and loads of salt or sugar in water, you create a solution that is *saturated*. The water is so filled up with salt or sugar that it can't hold any more.

Hot water holds much more salt or sugar than cold water does. As your glasses of solution sit, the water cools down and evaporates. The amount of salt or sugar the solutions can hold becomes less. They must get rid of all their extra salt and sugar. So, they let go of dissolved salt and sugar particles. These attach to the string and clip in the glasses. Each of these tiny particles is a crystal. When enough of them are connected, they form the beautiful shapes you see.



Did It!

Dog Breeds (pages 20-21)

1. BASSET HOUND
2. CHIHUAHUA
3. SCOTTISH TERRIER
4. COLLIE
5. LABRADOR RETRIEVER
6. DACHSHUND
7. GREYHOUND
8. COCKER SPANIEL
9. DALMATIAN
10. DOBERMAN PINSCHER
11. BEAGLE
12. IRISH SETTER
13. SAINT BERNARD
14. GERMAN SHEPHERD
15. BULLDOG
16. GREAT DANE
17. BOXER

Thank You! Special thanks to Christopher Dayton Wiesehahn for his footprint in this month's Busy Bodies.

Ooops! In our September *Earth Works* we told you that Mount St. Helens is in Oregon. It's really in Washington. Thanks to everyone who caught our mistake.

Credits

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Cat Hunt (page 27)

E	K	N	A	I	S	S	U	R	M	K	S		
C	S	Y	G	I	O	B	D	E	T	B	M		
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N	B	L	M	R	H	U	S	H	H	I	I		
L	R	L	I	A	P	E	R	S	I	A	N		
I	I	A	K	C	I	L	E	T	M	A	E		
A	T	L	M	V	O	S	N	A	A	C	C		
R	I	L	M	I	E	H	N	B	L	U	O		
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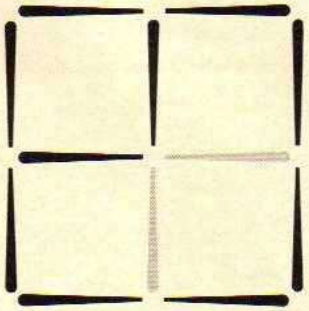
Toothpick Trick (page 27)



Triangle Teaser (page 27)

There are 20 triangles in the star.

Next Month!

Here is a sample of what you'll find in the next issue of 3-2-1 CONTACT:

Bloodhound Gang

Part One of an exciting new adventure.

Gliding Girl

Meet Elaine Zayak, a champion figure skater.

The Better to Bite With

A sharp story about how different animals use their teeth.

Plus Factoids, Earth Works, List of the Month and Much More!

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200 Watt Street, P.O. Box 2922, Boulder, Co. 80322

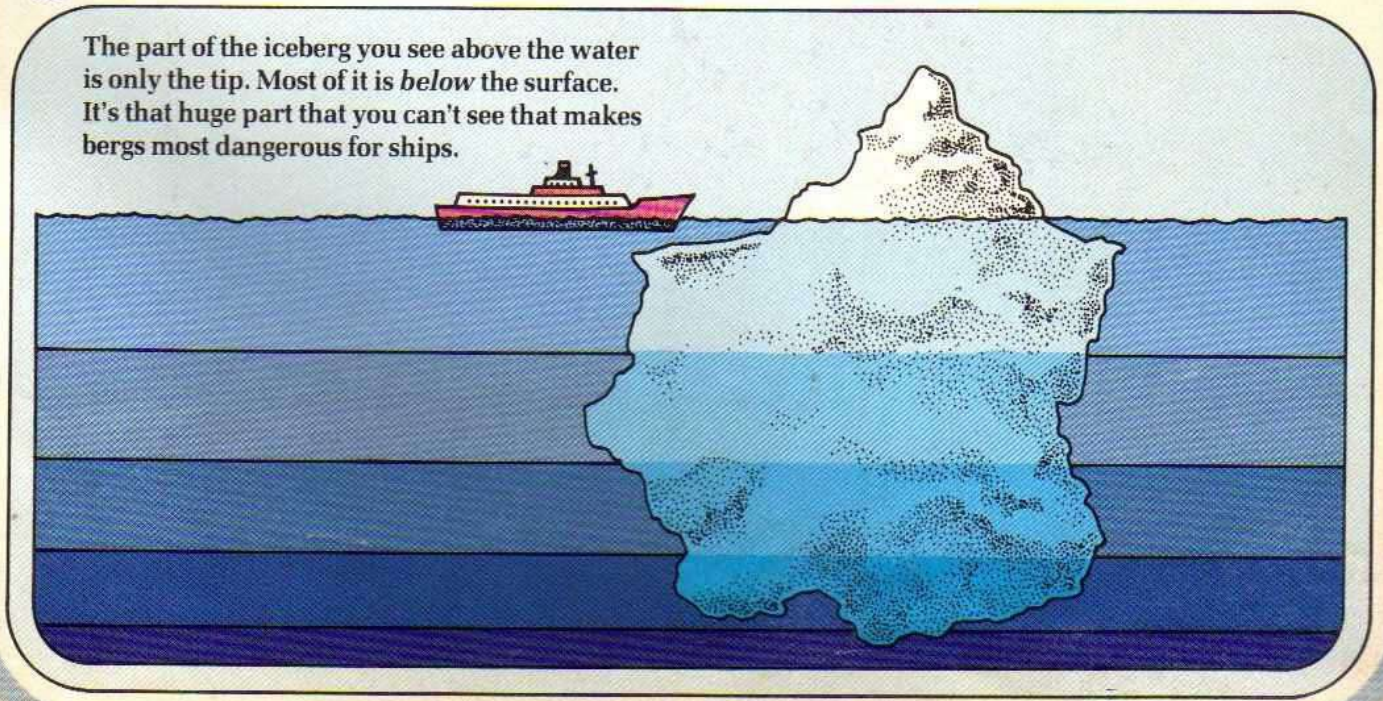
Earthfacts: Icebergs

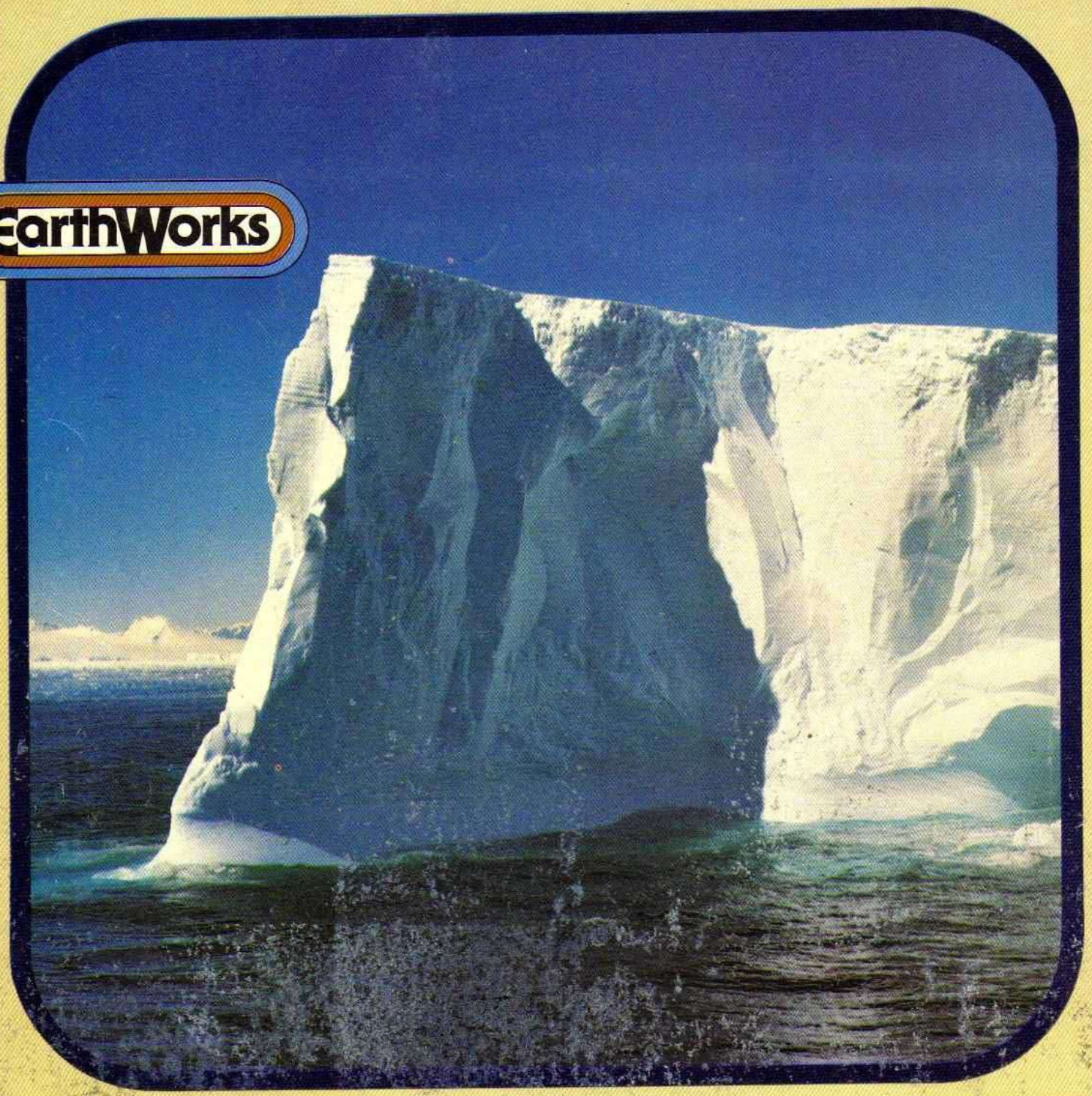
Each month CONTACT will bring you another *Earth Works*. Save these pages in a notebook. Soon you will have your own guide to the wonders of the planet Earth.

EarthWorks

- Berg means mountain in Dutch and German. So iceberg means ice mountain.
- Icebergs begin as snow, high in the mountains. If snow piles up from year to year, it gets packed down and turns into solid ice. The ice then starts to slide slowly down the mountainside, moving from three inches to six feet every day. This slowly-moving river of ice is a *glacier*. Near the coast, the glacier's front edge is pushed out. It forms a shelf of ice hanging over the water. Icebergs form when huge chunks of ice break off and fall into the sea.
- Many icebergs form in Antarctica. But most—about 20,000 each year—form in Greenland. Although there are more Greenland icebergs, Antarctic icebergs are usually larger.
- The largest iceberg ever seen was 60 miles (97 km) wide and 208 miles (335 km) long. That's an area larger than the state of Vermont!
- Not all icebergs are huge. Some, called *bergy bits*, are no bigger than a house. Bergs called *growlers* are the size of a small car.
- Many ways have been tried to destroy large icebergs—including bombs. The only sure weapon against a berg is heat. All icebergs melt, sooner or later, as they drift south into warmer waters.
- Small icebergs take two or three years to melt. Larger ones may last 10 years or more.
- Icebergs are seen mostly in spring and summer. In winter they remain trapped in frozen waters.
- Icebergs come in many shapes and sizes. Rounded ones are *domed* bergs. Irregular ones are *blocky* bergs. Flat ones are *tabular* bergs. Bergs with tall peaks are *pinnacle* bergs.
- The tallest pinnacle berg ever seen rose 550 feet over the surface of the water. That's taller than a 50-story building!
- Some people think icebergs can be put to good use. Their plan is to tow giant icebergs to desert areas. Then the bergs could be melted and used for fresh drinking water.
- Towing icebergs isn't as far out as it seems. When a berg moves too close to an oil-drilling platform out in the sea, tugboats put ropes around the berg and pull it away.

The part of the iceberg you see above the water is only the tip. Most of it is *below* the surface. It's that huge part that you can't see that makes bergs most dangerous for ships.





The largest icebergs come from Antarctica.

Focus on Icebergs

"Iceberg ahead!" Early on the morning of April 14, 1912, this alarm sounded on the ship *Titanic*. The huge ship, which was making its first voyage, was supposed to be unsinkable. But suddenly, through the blackness of night, the crew spotted a huge iceberg—right in the ship's path. Quickly, the pilot tried to turn the ship away, but it was too late. The *Titanic* slammed into the iceberg. The berg ripped a hole in the ship's bottom. Within a few hours the *Titanic* had sunk. More than 1,500 people went down with it.

The sinking of the *Titanic* showed the world how dangerous icebergs can be to modern ships. Soon after, many countries joined to form the *International Ice Patrol*. This organization watches for dangerous bergs. It makes sure that all ships stay clear of these floating mountains of ice.

(continued on page 39)